‘MARVELOUS ACCIDENTS’: THE *CONCERTO FOR PREPARED PIANO AND CHAMBER ORCHESTRA* OF JOHN CAGE

Brett N. Boutwell, B.M.E.

Thesis Prepared for the Degree of

MASTER OF MUSIC

UNIVERSITY OF NORTH TEXAS

December 1999

APPROVED:

Malena Kuss, Major Professor
Howard S. Meltzer, Minor Professor
Joseph Klein, Committee Member
Edward Baird, Director of Graduate Studies in Music
C. Neal Tate, Dean of the Robert B. Toulouse School of Graduate Studies

Boutwell, Brett N., ‘Marvelous Accidents’: The *Concerto for Prepared Piano and Chamber Orchestra* of John Cage. Master of Music (Musicology), December 1999, 86 pp., 19 figures, references, 34 titles.

John Cage’s *Concerto for Prepared Piano and Chamber Orchestra* (1950-51) holds a unique position within the composer’s oeuvre as the first work based in part on chance-derived compositional procedures. Cage entered into such practice gradually, incrementally abandoning subjective taste and personal expression through the course of the work. Drawing from the philosophical framework provided by Cage’s “Lecture on Nothing” (1950) and “Lecture on Something” (c. 1951-52), this thesis explores the aesthetic foundations of the concerto and examines Cage’s compositional methodology throughout its three movements. Special attention is paid to the procedure underlying the first movement, whose analysis is based largely on the composer’s manuscript materials for the work.

ACKNOWLEDGEMENT

Access to the manuscript compositional materials that formed the basis of this study was made possible by the John Cage Trust via its executive director, Laura Kuhn. I wish to thank the Trust for granting me permission to photocopy these materials in the course of research and for supporting the study of John Cage's music.

TABLE OF CONTENTS

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Background and Objectives

The years that encompassed John Cage's completion of his *Sonatas and Interludes* for prepared piano (1946-48) and his *Music of Changes* (1951) were of exceptional significance to the composer. After an unusual five-month lull in his correspondence with Pierre Boulez, Cage wrote a lengthy letter describing the period thusly: "All this year (in particular) my way of working has been changing."[1] The comment is perhaps an understatement, for not only had there been changes in his "way of working"—his organization and treatment of musical materials—but also in the aesthetic underlying those changes. In an interview of nearly two decades later, he was asked how he accomplished such a transformation in his manner of thinking. Referring to the pivotal work of this transitional period, Cage replied, "I wrote a *Concerto for Prepared Piano and Chamber Orchestra*."[2]

Given the significance assigned the work by Cage himself, it may seem unusual that the piece has never achieved the same degree of prominence held by the composer's other seminal works of the late 1940s and 1950s. Some of these pieces—the *Sonatas and Interludes*, *Music of Changes*, *4'33"* (1952), and the *Concert for Piano and Orchestra*

[1] John Cage, letter to Pierre Boulez, 22 May, 1951. In Jean-Jacques Nattiez, ed., with Francoise Davoine, Hans Oesch, and Robert Piencikowski, *The Boulez-Cage Correspondence*, trans. and edited by Robert Samuels (Cambridge, England: Cambridge University Press, 1993), 92. Originally published in French and English as *Pierre Boulez / John Cage: Correspondance et documents* (Winterthur: Amadeus Verlag, 1990, and Basel: The Paul Sacher Stiftung, 1990).

(1957-58)—have assumed roles in the body of Cage scholarship exemplifying discrete steps in the composer's development, steps that reveal his ideas and working methods as having reached new planes. By contrast, the *Concerto for Prepared Piano and Chamber Orchestra* (1950-51) is clearly a work reflecting transition, imbued with the ideological and compositional conflict one may expect in such a piece. Nevertheless, its organization displays the composer's awareness and sensitivity to this conflict, which becomes a central feature of the work and part of its overall design. What results is a piece of music that, over the course of three movements, allows its composer's evolving aesthetic to function as an underlying narrative, providing a unique sense of unity unlike that found in any of Cage's other works.

The aspect of transition best represented in the work is Cage's acceptance of chance techniques as a means of presenting his musical materials. Not only is the concerto the first piece in which he employed chance procedures, but their use occurs only in the last movement and comes about as a reconciliation of the techniques utilized in the previous movements. This is the internal transformation that allows the work to be seen as a microcosm of the changes in Cage's ideology that took place in the late 1940s and early 1950s.

The ideological shift that resulted in his adoption of chance as a governing compositional principle was related to his immersion in certain modes of Eastern thought, particularly Zen Buddhism. Two lectures given by Cage within the time frame surrounding the composition of the concerto, the "Lecture on Nothing" (1950) and the

---

[2] John Cage and Daniel Charles, *For the Birds: in conversation with Daniel Charles* (Boston: Marion Boyars, 1981), 41. Originally published in French as *Pour les oiseaux* (Paris: Editions Pierre Belfond, 1976).

"Lecture on Something," (c.1950-51) function as explanations of his newfound beliefs and as analogues to the actual composition (for Cage the lecture was never a simple forum for conveying information but also an artistic endeavor, as well). These lectures clarify the philosophical basis for Cage's compositional decisions in this work and in others that followed.

The musical structure and content of the concerto—including the elements that eventually fall under the control of chance procedures—are derived in part from compositional practices the composer had been using prior to writing the piece. These are twofold: the use of a strictly disciplined temporal structure (Cage called it a "rhythmic structure") that works on several levels across the piece, and the use of a series of charts containing musical materials that determine the piece's pitch content.

The use of a large-scale temporal structure harks back to Cage's earlier compositions and would remain a fixture of his works through the early 1950s. The structure, which he viewed as an important manifestation of discipline in his compositions, functions to organize the materials across large spans of time (e.g., structural sections following a prescribed pattern through the course of a piece) as well as on local levels, such as phrase structure. Thus, the temporal structure has a 'telescopic' effect, framing the musical materials on both micro- and macrocosmic structural levels.

Cage's choice of musical materials in the concerto is derived from a series of grid-like charts containing individual sonorities (aggregates, dyads, and single pitches). Such charts contain the musical material used by the orchestra in the first movement, and by both the orchestra and piano in the remaining two movements. Cage's method of controlling the chart materials evolves throughout the piece, from the use of simple

patterns (in the first movement) to rigorous applications of chance procedures derived from the *I Ching* (in the final movement). In the first movement, the composer sets up a polarity between the piano, which uses freely composed material, and the orchestra's chart-derived material. The polarity is weakened in the second movement, in which both forces are controlled by charts, and ultimately defused in the third movement, for which a single chart is used. This final chart provides material for both performing forces and is manipulated through chance procedures.

Cage's use of the chart technique in this work was first described in partial detail by James Pritchett in his 1988 dissertation on Cage's chance compositions.[3] Pritchett's research is largely based on compositional sketches previously owned by David Tudor, which are now housed at the Getty Museum in Los Angeles. It is the purpose of this study to consolidate Pritchett's findings with my own analysis, which considers also manuscript compositional materials in the Cage Collection of the Library of the Performing Arts at Lincoln Center. These materials, namely the composer's original charts for the piece, allow for a thorough exploration of this unique work, among the most important in the Cage oeuvre.

Current Cage Research: A Summary

Pritchett's research has been among the most prominent within a wave of scholarly inquiry into the composer's music during the 1980s and 1990s. Rejecting the

[3] James W. Pritchett, "The Development of Chance Techniques in the Music of John Cage, 1950-1956" (Ph.D. diss., New York University, 1988). The majority of Pritchett's discussion of the *Concerto for Prepared Piano and Chamber Orchestra* in his dissertation was subsequently published as "From Choice to Chance: John Cage's *Concerto for Prepared Piano*" in *Perspectives of New Music* 26/1 (Winter 1988): 50-81.

commonly held notion that Cage's philosophical and aesthetic impact on twentieth-century artistic thought outweighs his musical contribution, Pritchett produced the first scholarly monograph devoted primarily to analyses of the composer's music.[4] He chastises those critics who have created one-dimensional caricatures of Cage as a philosopher whose music is but a secondary by-product of his thoughts, writing,

> Cage-as-philosopher is thus an image that will not bear close scrutiny; we thus must seek a new image, a new role for Cage. It is in this respect that I am, in this book, returning to the obvious: that Cage was a composer.[5]

To deny that Pritchett treats the composer's aesthetic views with due care, however, would be misrepresenting his research; his discussion of individual works is always accompanied by some explanation of the ideas that underlie them. Nevertheless, his primary goal remains the careful analysis of Cage's music, a pursuit taken up by others as well.[6]

Others still have dealt with the issue of "Cage-the-philosopher" in a quite different way, seeking to clarify his ideological stance through scholarly research, rather than underplay its significance. Among these musicologists and aestheticians is David Patterson, whose 1996 dissertation explicates the appropriations of Indian and Far-Eastern thought embedded within Cage's rhetoric between the years 1942-59.[7] Patterson views the treatment of Cage from an exclusively analytical/theoretical position as misguided:

---

[4] James Pritchett, *The Music of John Cage* (Cambridge, England: Cambridge University Press, 1993).

[5] Ibid., 3.

[6] For example, see Deborah Campana's "Form and Structure in the Music of John Cage" (Ph.D. diss., Northwestern University, 1985), and Laura Kuhn's "John Cage's *Europeras 1 & 2*: The Musical Means of a Revolution" (Ph.D. diss., U.C.L.A., 1992).

[7] David Patterson, "Appraising the Catchwords, c. 1942-1959: John Cage's Asian-Derived Rhetoric and the Historical Reference of Black Mountain College" (Ph.D. diss., Columbia University, 1996).

> In total, John Cage's contributions to music, art, poetry, and theater comprise a prodigiousness that defies pithy summary, and today, most Cage scholars openly accept his historical status as "something else" rather than "composer." However, they do not evoke this phrase as a pejorative as others may have done before, but instead use it to openly acknowledge his total creative product, of which his central achievements as a full-fledged "composer" are nonetheless but a part.[8]

Patterson approaches Cage's rhetorical borrowings in a systematic manner, cross-referencing them with citations from Ananda Coomaraswamy, D.T. Suzuki, and other scholars and artists whose philosophical writings formed the basis of Cage's aesthetic during the 1940s and 1950s. In doing so, he clarifies many often-misunderstood concepts, demonstrating their connections to one another and to Cage's art.[9] Another musicologist whose recent work has approached Cage from a primarily aesthetic/historical position is Christopher Shultis, whose 1998 monograph assesses the composer's role within a larger group of experimental American artists.[10]

The surge of musicological interest in Cage over the past two decades has proven invaluable in sorting out the many facets of this complex individual. The degree of scholarly rigor is a welcome addition to a body of prior research that is often merely anecdotal, and at times fraught with errors.[11] In this thesis, I aim to present a thorough analysis of both the technical and aesthetic dimensions of the *Concerto for Prepared*

---

[8] Ibid., vii-viii.

[9] Included among these connections are some Patterson deems tenuous due to Cage's "subversion" of an appropriated concept to suit his needs.

[10] Christopher Shultis, *Silencing the Sounded Self: John Cage and the American Experimental Tradition* (Boston: Northeastern University Press, 1998). The introduction to Shultis' book begins, "Context is a predominant concern in my study of John Cage." He later states that "Cage's music and ideas need not be separated in the act of criticism. And that goes for his texts, as well." These statements—cf. those of Patterson—appear in part as a response to Pritchett's critique of critics wishing to treat Cage as "something else" than as a composer.

[11] One example among many, and specifically relevant to the study at hand, involves the dates of Cage's attendance at lectures given by Zen scholar D.T. Suzuki at Columbia University. Previously placed

Piano, and in doing so attempt to offer a useful complement to the emerging body of Cage scholarship.

in the middle- and late-1940s, these lectures have been recently proven to have occurred no earlier than 1951. See Patterson, 142.

CHAPTER 2

COMPOSITIONAL AND AESTHETIC FOUNDATIONS OF THE *CONCERTO FOR PREPARED PIANO AND CHAMBER ORCHESTRA*

Throughout a professional career that spanned nearly sixty years, the influences on Cage's music and thought were diverse in character and wide in scope. In his numerous writings and interviews he always acknowledged those artists and thinkers—past and present—with whom he shared certain philosophical and aesthetic beliefs. The Indian and Far-Eastern influences on his thought in the 1940s and 1950s, although of lasting significance, were by no means were the only ones of consequence. In the years that followed, until his death in 1992 at the age of 79, Cage drew inspiration from sources as diverse as Henry David Thoreau, Ludwig Wittgenstein, Marcel Duchamp, Buckminster Fuller, and Marshall McLuhan, among others.

With regard to the 1940s and 1950s, it is apparent that certain facets of Indian philosophy made their way into Cage's artistic outlook several years before those of Taoism or Buddism. Although the ideas he borrowed from these schools of thought share many similarities, they also differ on points relevant to his music, and these differences at times bear critical scrutiny. My discussion of influences from Indian thought on Cage's music and aesthetic will center upon his contact with the writings of art historian and aesthetician Ananda Coomaraswamy (1877-1947).

Cage's earliest reference to Coomaraswamy in writing occurs in an article from 1946,[1] although his contact with Coomaraswamy's book *The Transformation of Nature in Art*[2] might have stretched back to 1942.[3] The most frequent allusion to Coomaraswamy in Cage's writing comes in the form of a definition of art borrowed from the philosopher:

> I have for many years accepted, and I still do, the doctrine about Art, occidental and oriental, set for by Anada K. Coomaraswamy in his book *The Transformation of Nature in Art*, that the function of Art is to imitate Nature in her manner of operation.[4]

Cage also shared with Coomaraswamy a view of art as a process rather than a fixed entity, a process connecting it with everyday life and world around it. Likewise, both felt a disdain for the 'museum culture' associated with contemporary art, the attitude that art should be elevated and appreciated from afar.[5] Cage also accepted, although temporarily, Coomaraswamy's belief in the communicative power of artworks.

In the *Sonatas and Interludes*, completed in 1948, Cage attempted to express the nine permanent emotions (*rasas*) of Indian philosophy, with which he had become acquainted through *The Transformation of Nature in Art*.[6] Similarly, two works preceding and following the *Sonatas and Interludes*, *The Seasons* (1947) and the *String Quartet in Four Parts* (1949-1950), are quasi-programmatic in their depiction of the

---

[1] John Cage, "The East in the West," *Modern Music* 23/2 (Spring 1946): 111-115.

[2] Ananda Coomaraswamy, *The Transformation of Nature in Art* (Cambridge, MA: Harvard University Press, 1934). Reprint ed., New York: Dover, 1956.

[3] David Patterson, "Appraising the Catchwords, c. 1942-1959: John Cage's Asian-Derived Rhetoric and the Historical Reference of Black Mountain College" (Ph.D. diss., Columbia University, 1996), 75.

[4] John Cage, "Happy New Ears!" in *A Year From Monday* (Middletown, CT: Wesleyan University Press, 1967), 31. Patterson points out the original source of this definition as being St. Thomas Aquinas ("*Ars imitatur naturam in sua operatione*"); it is, in fact, Cage's appropriation of Coororaswamy's appropriation of Aquinas.

[5] Patterson, 77-80. See also Cage's comments on art in a series of essays dealing with the subject of composer Erik Satie, in *John Cage*, ed. Richard Kostelanetz (New York: Praeger Publishers, 1970), 89-94.

[6] John Cage, "On Earlier Pieces" (1958) in *John Cage*, ed. Kostelanetz (New York: Praeger Publishers, 1970), 129.

Indian conception of the four seasons.[7] As will be discussed later, the notion of music as a communicative, expressive art would become one of several components of Cage's aesthetic to undergo a transformation in the years to follow. More directly relevant to his emerging compositional techniques, however, were certain ideas Cage drew from Meister Eckhart, a 14th-century mystic quoted extensively in Coomaraswamy's writings. Before discussing the influence of Eckhart, however, it is necessary to examine certain facets of Cage's beliefs on musical structure and form.

One of the most important concepts underlying Cage's aesthetic in this period was his division of musical composition into four constituent parts, and the duality of discipline and freedom these elements possess. It was a belief he expressed on several occasions and in many contexts, and one that has bearing on more detailed aspects of his working method. A discussion of this model is important not only as a means of shedding light on these more specific concepts, but also to eliminate any misconceptions about his choice of terminology.

Cage's fourfold musical model consisted of structure, form, materials, and method. The division may appear misleading at first due to the similarity in meaning traditionally assigned to the first two terms. In Cage's view, however, these components—structure and form—played different roles. His definition of structure may seem closely linked to the standard idea of form in the rhetoric of Western classical music: "the division of the whole into parts."[8] This division, however, was one strictly based on predetermined

[7] James Pritchett, *The Music of John Cage* (Cambridge, England: Cambridge University Press, 1993), 40, 48. Cage's earliest attempt at such representation came with the piece *Amores* (1943), conceived to express two of the nine *rasas*, the erotic and the tranquil.

[8] John Cage, "Forerunners of Modern Music" (1949) in *Silence* (Middletown, CT: Wesleyan University Press, 1961), 62. Originally published in *The Tiger's Eye* 7 (March 1949): 52-56. The fourfold

temporal units, not on harmonic movement, cadencing, and the like. His idea of form comes closest to what may be commonly referred to as content, or in unwieldy Cagean rhetoric, "the morphology of the continuity." This form (i.e., content) is drawn from the raw musical sources—the "materials"—and manipulated through a specific operational procedure, the "method."

The domain of structure was, to Cage, of paramount importance as a means of providing discipline and consistency to musical composition. In 1948, he wrote:

> There must, as a *sine qua non* in all fields of art and life, be some kind of structure—otherwise chaos. And the point here to be made is that it is in this aspect of being that it is desirable to have same-ness and agreed-upon-ness…We call whatever diverges from sameness of structure monstrous.[9]

By way of contrast, he writes of form, "...it is in its nature that there should be many varieties of it…this is a matter of individual feeling."[10] Thus Cage sets up an important duality: on the one hand structure, representing discipline and "same-ness," and on the other hand form, representing freedom and variety. The "sameness" that Cage understood to be proper in the establishment of structure, its common denominator, was the aspect of time (i.e., duration). This was a belief to which Cage clung with great persistence until the mid-1950s, and it proved to be a critical feature in his musical construction. The manner in which he derived temporality as the only acceptable basis of structure reveals much of his highly polemicized rhetoric in the late-1940s:

---

definition of musical composition appears elsewhere, as well; see "Composition as Process" (1958), parts I and II, in *Silence*, 18-40. In later years Cage clung to the model with less rigor. Late in his life he described a list of fifteen items that were his 'concerns' with regards to music, supplanting the earlier model and demonstrating how his thinking on such issues had evolved over time. See John Cage and Joan Retallack, *Musicage: Cage Muses on Words, Art, Music* (Middletown, CT: Wesleyan University Press, 1996), 208-209.

[9] "Defense of Satie" (1948) in *John Cage*, ed. Kostelanetz, 80.

[10] Ibid., 81.

> Sound has four characteristics: pitch, timbre, loudness, and duration. The opposite and necessary coexistent of sound is silence. Of the four characteristics of sound, only duration involves both sound and silence. Therefore, a structure based on durations (rhythmic: phrase, time lengths) is correct (corresponds with the nature of the material), whereas harmonic structure is incorrect (derived from pitch, which has no being in silence).[11]

Despite the conviction with which he argues his point, Cage only may have decided upon this rationalization for temporal structuring after the fact. Pritchett notes that the above argument did not surface until 1948, and in the years prior Cage had cited other justifications for using the technique.[12] Composing much of his music to accompany dance, he argued the superiority of temporal structure as a means of matching the choreography; he also noted that many of the non-pitched instruments he employed were incapable of yielding harmonic structure, though perfectly able to function within a temporal structure.

Beginning with *First Construction (in Metal*) in 1939, Cage used a specific design of temporal structure in the majority of his works until 1952, among them the *Concerto for Prepared Piano*. He referred to this design as the pieces' "rhythmic structure," a term I will employ specifically to refer to this particular pattern of temporal construction.[13] The basis of the structure is a sequence of numbers, usually between four and eight, either integers or mixed fractions. The sequence may appear as simple as <4, 3, 2, 3, 4>,

[11] Cage, "Forerunners of Modern Music" (1949) in *Silence*, 63 n.2. In addition to his comments on structure, N.B. Cage's stance at this point not only in the existence of silence, but in its strict opposition to sound.

[12] Pritchett, *The Music of John Cage*, 206 n.11.

[13] It may be argued that the term "rhythmic structure" is a misnomer, however. The structure does not usually operate with regards to rhythm, per se (as it is generally understood to be localized patterns of duration) but instead with respect to larger frames of temporal reference, e.g. measures, phrases, sections, etc. Nevertheless, Cage's consistent use of the term—and its subsequent usage in Cage scholarship—makes the employment of new terminology grounds for confusion.

as in the case of *First Construction (in Metal)*; it may be as complex as <3, 5, $6^{3}/_{4}$, $6^{3}/_{4}$, 5, $3^{1}/_{8}$>, as in the case of *Music of Changes*.

At the outermost level, the sequence reveals the number of large structural sections in the piece it describes. For example, a piece with a sequence of five numbers has five sections, a piece with seven numbers has seven sections, etc., so that each number represents one section in the work as a whole. The rhythmic structure of Cage's *Imaginary Landscape No. 3* (1942), for instance, is represented by the sequence <3, 2, 4, 3>, and it therefore contains four large sections.

Each of these sections contains a number of subsections, referred to hereafter as groups. The number of groups per section is determined by the numeric sequence: if the first number in the sequence is a three, the first section has three groups, if the first number is a five, the first section has five groups, etc. Because *Imaginary Landscape No. 3* has a rhythmic structure following the sequence <3, 2, 4, 3>, its first section has three groups, its second has two groups, its third has four groups, and its final section has three groups.

Each group contains several phrases, the number of which corresponds to the number of numerals in the sequence. The lengths of phrases, in measures, are determined also by the numeric sequence. Thus the overall structure of the work, on several levels, is controlled by the same pattern of numbers. The result is a telescopic array of structures within structures, akin to geometric fractals. This feature led Cage to refer to the rhythmic structure, at times, as a "micro-macrocosmic structure."

While somewhat nebulous when viewed as an abstraction, the concept of rhythmic structure becomes clearer when placed within the context of a specific

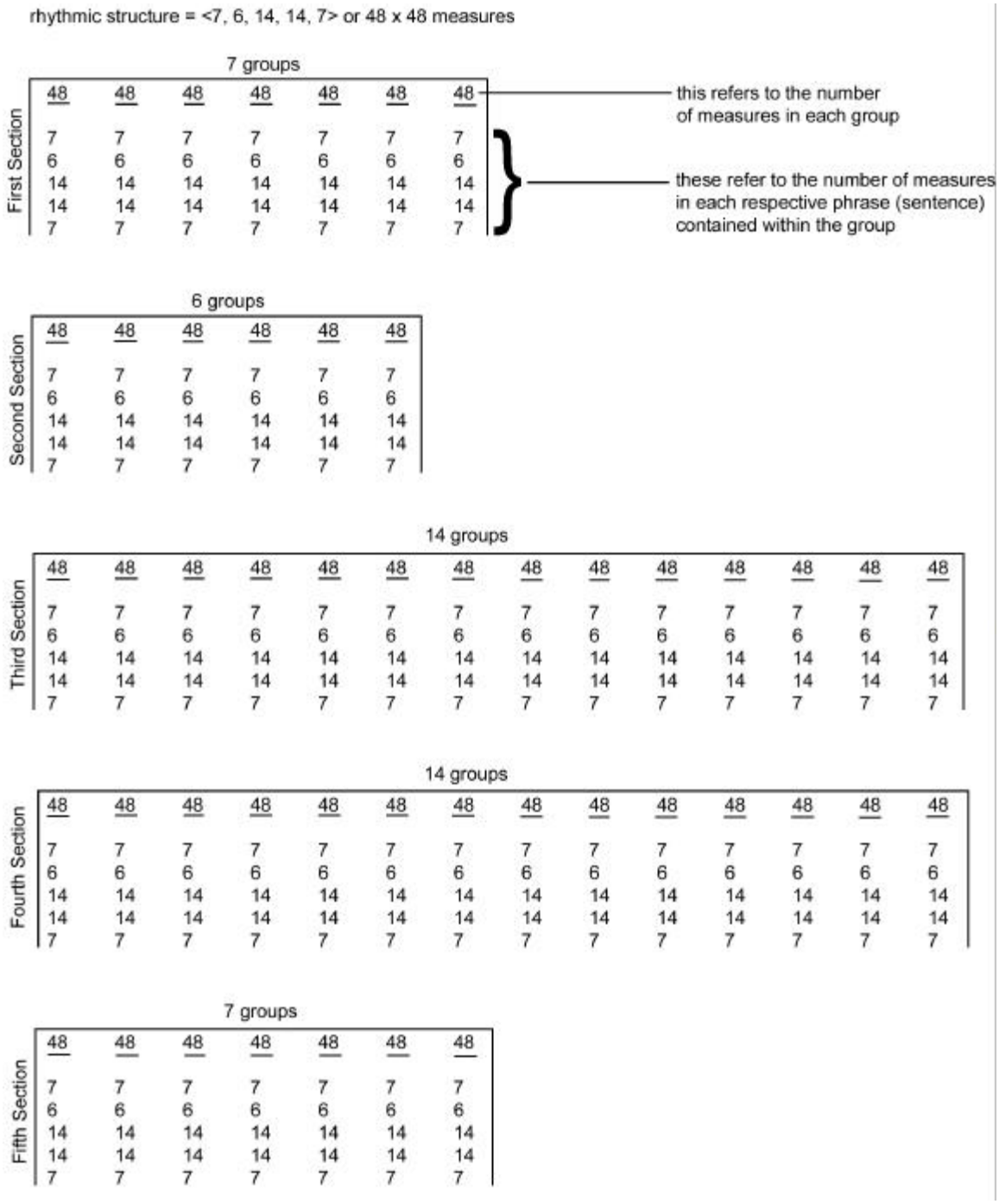
application. In his "Lecture on Nothing,"[14] first delivered in 1950 at the Artists' Club in New York, Cage both describes the structure verbally and demonstrates it through the lecture itself, thus making the work a particularly suitable example for such an examination. The lecture is built upon a rhythmic structure in the same manner as Cage's music, and on the printed page the text is divided proportionally into four 'measures' per line, creating a parallel between the prose and musical notation.

The lecture's rhythmic structure is <7, 6, 14, 14, 7>. It therefore consists of five sections, corresponding to the five numerals in the sequence. The first of these sections contains seven groups, the second contains six groups, the third contains fourteen groups, etc. Each of these groups contains forty-eight measures, the sum of the numerals in the sequence. These groups are divided into five individual sentences (the prose equivalent, in this instance, of musical phrases). The sentences have lengths that correspond to the numeric sequence: the first is seven measures long, the second is six measures long, the third is fourteen measures long, etc.[15] Thus the overall structure may be thought of as 'forty-eight groups of forty-eight measures', or '48 x 48 measures'; this feature led Cage to refer to it occasionally as a "square-root" structure. The structure of *First Construction (in Metal)*, for example, is 16 x 16 measures; for *Music of Changes* it is $29^5/_8$ x $29^5/_8$ measures. See figure 1 for a visual representation of the rhythmic structure underlying the "Lecture on Nothing."

[14] Cage, "Lecture on Nothing" (1950) in *Silence*, 109-127.

[15] While the exact lengths of the sentences do not correspond to the numbers in the sequence, their proportional lengths on the printed page do; Cage inserts blank space (like musical rests) to make the sentences the proper length. Likewise, when the speech is read aloud, the blank spaces become pauses, allowing the structure to function in a truly temporal sense.

Figure 1. Rhythmic structure, “Lecture on Nothing.”



The lecture stands apart from Cage's other works from this period in that it not only demonstrates rhythmic structure, but describes it verbally, as well. The prose description of rhythmic structure within the lecture carries the self-replicating / 'fractal' nature of the structure to another level, as the *form* (i.e., verbal content) of the lecture addresses the *structure* of the lecture.

This verbal formulation takes two forms: one being overt, the other being somewhat abstract and philosophical in nature. The overt descriptions are the most apparent. In the second section, he writes:

> How could I better tell what structure is than simply to tell about this, this talk which is contained within a space of time approximately forty minutes long? That forty minutes has been divided into five large parts, and each unit is divided likewise. Subdivision involving a square root is the only possible subdivision which permits this micro-macrocosmic rhythmic structure which I find so acceptable and accepting.[16]

Cage also periodically digresses from the topic at hand to guide the listener (or reader) in navigating the structure; for example, "From a macrocosmic point of view we are just passing the halfway point in the second large part,"[17] or, "Here we are now a little bit after the beginning of the third unit of the fourth large part of this talk."[18]

The commentary of greater significance, however, reveals not just the technical workings of Cage's rhythmic structure, but the aesthetics underlying the structure. For the essence of the "Lecture on Nothing" is Cage's rendering of structure as a negative entity, existing in a state of emptiness and negation; this is the "nothing" that the title refers to. It functions separately from form (content) and is thus defined separately, unlike a structure dictated by the harmonic properties of a work. The structure is

[16] Cage, "Lecture on Nothing" (1950) in *Silence*, 111-112.
[17] Ibid.

therefore empty from the start, a template upon which form may be laid. Or, in Cage's words, "…it is like an empty glass into which at any moment anything may be poured."[19] By existing in such a state of emptiness, structure may be filled by any form imaginable: "Structure is simple because it can be thought out, figured out, measured. It is a discipline which, accepted, in return accepts whatever…."[20]

It is through this concept of negation and emptiness that we arrive back at the influence of Coomaraswamy and Eckhart on Cage's aesthetic. Among the beliefs central to Coomaraswamy's writings is the existence of an Ultimate Reality, arrived at primarily through transcendental experience. This experience is one of self-negation, or in Coomaraswamy's terminology, "self-naughting."[21] A similar idea is also found in Eckhart's writings, as quoted by Coomaraswamy. To Eckhart, a realization of God only comes with an inner emptiness, an ignorance, an "unselfconsciousness."[22] Pritchett summarizes the belief as follows: "Eckhart proclaims that through the discipline of self-negation we shall attain a state of such emptiness that we can then freely receive knowledge of the infinite."[23] Cage makes reference to Coomaraswamy and Eckhart in many of his writings, often specifically to this aspect of self-naughting and its potential to result in divine intervention or the apprehension of an Ultimate Reality. Among the most prominent are references in the article "Forerunners of Modern Music," in which he quotes Eckhart liberally, including the following:

---

[18] Ibid., 119.
[19] Ibid., 110.
[20] Ibid., 111.
[21] Patterson, 70, 90.
[22] Pritchett, *The Music of John Cage*, 46.
[23] Ibid.

> But one must achieve this unselfconsciousness by means of transformed knowledge. This ignorance does not come from lack of knowledge but rather it is from knowledge that one may achieve this ignorance. Then we shall be informed by the divine unconsciousness and in that our ignorance will be ennobled and adorned with supernatural knowledge. It is by reason of this fact that we are made perfect by what happens to us rather than by what we do.[24]

It is with this state of inner-emptiness and inaction, as described in the writings of Coomaraswamy and Eckhart, that one may make a connection with the inherent emptiness Cage described as characterizing his rhythmic structures. He viewed the structure as existing in a state of nothingness, and thus being able to accept all sounds that enter into it; likewise, the Coomaraswamy/Eckhart model of self-naughting exists only in the absence of intellectual thought and reason, allowing divine intervention or the apprehension of a higher reality. Pritchett notes the similarity of rhetorical construction, writing,

> Just as Eckhart sees the discipline of self-denial as necessary for obtaining the all-encompassing inner silence, so Cage sees rhythmic structure as a discipline that "leads now to self-knowledge through self-denial."[25]

With an understanding of these conceptual borrowings, one may further deconstruct the language of negation that peppers the "Lecture on Nothing." For example, as Cage begins the lecture, the predetermined rhythmic structure is in place, but he has no notions of what form will fill it: as a result, "I am here and there is nothing to say."[26] And later, "As we go along, (who knows?) an idea might occur in this talk. I have no idea whether one will or not. If one does, let it."[27] Finally, in what is perhaps the most confounding

---

[24] Cage, "Forerunners of Modern Music" (1949) in *Silence*, 64. Pritchett identifies one source of Eckhart's quotation in Raymond Bernard Blakney, trans., *Meister Eckhart: A Modern Translation* (New York: Harper and Brothers, 1941), 107.

[25] Pritchett, *The Music of John Cage*, 47.

[26] Cage, "Lecture on Nothing" (1950) in *Silence*, 109.

[27] Ibid., 110.

trope in the lecture upon first reading, Cage insists again and again in his desire to "go nowhere":

> I have the feeling that we are getting nowhere. Slowly, as the talk goes on, we are getting nowhere and that is a pleasure. It is not irritating to be where one is. It is only irritating to think one would like to be somewhere else.[28]

The sentiment of "being nowhere" and "getting nowhere" appears linked to the concepts of mental quiescence and self-naughting, the state that may lead to enlightenment. In a medium both artistic and didactic, Cage again and again reveals the link between his emerging artistic philosophy and analogous modes of thought in the writings of Coomaraswamy and Eckhart.

Other appropriations of Coomaraswamy's ideas may be found in the lecture, as well. The sense of spontaneity associated with self-negation—the acceptance of whatever may occur—carries in tandem a view of art in terms relating to process rather than to permanency. Coomaraswamy's conception of an artwork, therefore, is of a transient manifestation of an Ultimate Reality, not of an object to be displayed for posterity.[29] Cage, too, expresses this idea of artistic transcience in the "Lecture on Nothing":

> Or you may leave [an idea] forever and never return to it, for we possess nothing. Our poetry now is the realization that we possess nothing. Anything therefore is a delight (since we do not possess it) and thus need not fear its loss. We need not destroy the past: it is gone; at any moment, it might reappear and seem to be and be the present. Would it be a repetition? Only if we thought we owned it, but since we don't, it is free and so are we.[30]

This conception of art-as-process, a rejection of many Western-derived aesthetic formulations, was manifest in Cage's other writings, as well. In the year prior to

[28] Ibid., 118-123.
[29] Patterson, 83.

delivering the "Lecture on Nothing," he gave another talk at the Artists' Club dealing with the sand paintings of southwestern Native American cultures. He viewed the medium as an exemplary model of the transcience to which music should aspire. In "Forerunners of Modern Music" he described it as "art for the now moment rather than for posterity's sake," adding,

> This is the very nature of the dance, of the performance of music, or any other art requiring performance (for this reason, the term "sand painting" is used: there is a tendency in painting (permanent pigments), as in poetry (printing, binding), to be secure in the thingness of a work, and thus to overlook, and place nearly insurmountable obstacles in the path of, instantaneous ecstasy).[31]

The emptiness of rhythmic structure, the open acceptance of any sounds into that structure, and a transient view of the artistic process were all central tenets of Cage's aesthetic as expressed in the "Lecture on Nothing." This collection of ideas is far from complete, however. There exist further ramifications of the second item on the list, "the open acceptance of any sounds"—the effect of which perhaps constitutes Cage's largest philosophical leap in the years prior to composing the *Concerto for Prepared Piano.* By shifting the role of the composer from one of "doing" to one of "accepting," he starts to question the nature of continuity in music, and begins a transformation that results in his adoption of indeterminate[32] means of composition. Such a transformation occurred with his simultaneous immersion in East Asian thought, particularly Taoism and Buddhism.

---

[30] Cage, "Lecture on Nothing" (1950) in *Silence*, 110.

[31] Cage, "Forerunners of Modern Music" (1949) in *Silence*, 65 n.10.

[32] The term 'indeterminate' appears throughout Cage's writings after 1958 and in the literature associated with his music. It is sometimes regarded synonymously with the term 'aleatoric', both being used to refer to music in which there is some abdication of the composer's control over the compositional process, or over its outcome in musical performance. The usage has been inconsistent, however. Cage used the term 'indeterminate' only to refer to works that exhibit variability in performance due to intentional ambiguity in their notation. These, in Cage's words, are "Compositions which are indeterminate with respect to their performance," as he explains in his essay "Indeterminacy," part II of "Composition as Process" (1958) in *Silence*, 35-40. It would then follow that some of Cage's works could

Cage had long embraced in his music the use of sounds traditionally thought to be noise. As early as 1937 he expressed a belief that the future of music lay in the acceptance of such sounds, and with it, the abandonment of distinctions between consonance and dissonance[33]—ideas that may be easily traced back to the revolutionary writings of the Italian Futurists more than two decades earlier.[34] These beliefs are readily apparent in his early compositional output: the large number of works for percussion,[35] the works for experimental media,[36] and his famous invention, the prepared piano. With his immersion in Eastern thought, however, Cage's concern was not merely focused on accepting those sounds which many found unacceptable, but of allowing the sounds to emerge in a spontaneous manner—allowing his music to "imitate nature in her manner of operation." He had become convinced of the inherent inter-connectedness of all things, and felt no obligation to bring about a forced sense of continuity in his music when a natural one already existed. In the "Lecture on Nothing" he writes about his concept of musical form and the continuity of poetic form contained in the lecture:

> What I am calling poetry is often called content. I myself have called it form. Continuity today, when it is necessary, is a demonstration of our disinterestedness. That is, it is a proof that our delight lies in not possessing anything. Each moment presents what happens. How different this form sense

---

be described as 'indeterminate with respect to their composition', e.g. his chance-composed works, and many writers refer to these, too, as 'indeterminate'. Cage, however, never did; while they were 'composed with chance procedures' to him, they were never indeterminate unless the score existed in a flexible state that allowed for a multitude of different realizations. For the sake of clarity, I will refer to Cage's chance-derived pieces as 'indeterminate' only when qualifying the term, viz. 'compositionally indeterminate' or 'indeterminate means of composition'.

[33] Cage, "The Future of Music: Credo" (1937) in *Silence*, 3-4.

[34] David Nicholls, "Cage and the Ultra-Modernists," presented at the meeting of the American Musicological Society in Boston, 30 October, 1998.

[35] E.g., the *Constructions* pieces: *First Construction (in Metal)* (1939), *Second Construction* (1940), *Third Construction* (1941), among others.

[36] E.g., the *Imaginary Landscape* pieces: *Imaginary landscape No. 1* (1939), *No. 2* (1942), *No. 3* (1942), and later, *No. 4* (1951), and *No. 5* (1952), among others.

> is from that which is bound up with memory: themes and secondary themes; their struggle; their development; the climax; the recapitulation […][37]

This "disinterest" with continuity, or rather, with the imposition of continuity, lies at the heart of Cage's music composed after the *Sonatas and Interludes*, and was in large part responsible for his seeking alternative methods of composition during the period. It abounds in the "Lecture on Nothing." Equating artificial continuity with the teleological urge to "get somewhere," Cage instructs his audience, "If among you are those who wish to get somewhere, let them leave at any moment."[38] Consider again his statement, "I have the feeling we are getting nowhere. Slowly, as the talk goes on we are getting nowhere and that is a pleasure."[39]

While Cage broached the subject of continuity in the "Lecture on Nothing," he explored the issue in full with a subsequent presentation at the Artists' Club, the appropriately-titled "Lecture on Something" (c.1951-52).[40] Whereas the principal focus of the "Lecture on Nothing" had been Cage's conception of rhythmic structure (and its inherent 'nothingness'), the "Lecture on Something" is devoted to the issue of form, and the spontaneous continuity it engenders; he comes to call this natural and unforced continuity "no-continuity." He identifies form (content) as being a necessary complement of structure, the former being identified with "something" and the latter with "nothing":

---

[37] Cage, "Lecture on Nothing" (1950) in *Silence*, 111.
[38] Ibid., 109.
[39] Ibid., 118-123.
[40] Reprinted in *Silence*, 128-145. There exists speculation over the exact date that the lecture was delivered. According to the lecture's preface in *Silence*, it was first printed in the journal *It Is*, ed. Philip Pavia, in 1959. That article featured an introduction in which Cage claims to have delivered it ten years prior (in 1949). Cage's memory on such issues was notoriously inexact, however, and this date appears to be somewhat premature. Pritchett dates the lecture to early 1951, Patterson to c. 1951-52.

> This is a talk about something and naturally also a talk about nothing. About how something and nothing are not opposed to each other but need each other to keep on going.[41, 42]

As an example of the concept of 'no-continuity', Cage turns in the "Lecture on Something" to the music of Morton Feldman. He writes of Feldman's early graphic scores, in which only general designations of pitch are given (high, medium, or low) and in which duration is left indeterminate with regard to performance. To Cage, these works demonstrated Feldman's willingness to accept whatever sounds may come along, given broadly defined parameters, and thus they revealed him as a composer "accepting" rather than "making." This, to Cage, was nothing short of artistic heroism, an aesthetic leap allowed only by the rejection of any systematic conception of tonal relations:

> Feldman allows [the sounds] to be if they happen to come along. And to explain again, the only reason for his being able to allow them is by his acting on the assumption that no tonal relations exist, meaning all tonal relations are acceptable.[43]

This acceptance on Feldman's part created the sense of 'no-continuity' in his music. Cage defines 'no-continuity' as "accepting that continuity that happens"; this stands opposed to the traditional artistic conception of continuity, which he describes as "making that particular continuity that excludes all others."[44] Feldman's 'no-continuity' brings his music closer to real life, Cage felt, and closer to "imitating nature in her manner of operation." It did not exist in a frame of reference that could be removed from

---

[41] Cage, "Lecture on Something" (c. 1951-52) in *Silence*, 129.

[42] It quickly becomes apparent that Cage enjoyed the semantic games his new rhetoric allowed for. The more vexing of these passages may be interpreted as a nod to the dialogues, known as *mondo*, that transpire between masters and their students in the literature of Zen Buddhism. These exchanges often feature intentional paradoxes, contradictions, and non-sequiturs, all with the aim of eliciting a sudden realization in the student's mind or testing one's depth of insight. For a brief summary of the practice, see Alan Watts, *The Way of Zen* (New York: Pantheon Books, 1957; reprint, New York: Vintage Books, 1989), 87-88 (page citations are to the reprint edition).

[43] Cage, "Lecture on Something" (c. 1951-52) in *Silence*, 133.

everything around it—'museum culture'—but, rather, as a part of its surroundings. It becomes apparent as one reads the "Lecture on Something" that Morton Feldman, although clearly held in high regard by Cage, was only a vehicle through which the issues of 'no-continuity' in musical form could be addressed; the lecture could just as well have been written about the emerging music of Cage himself.[45]

The ideas in the lecture, while an extension of those in the "Lecture on Nothing," are perhaps more directly indebted to Cage's growing interest in Zen. While appropriations of Taoist and Buddhist thought may be found in the older lecture, in the newer there are overt citations to the *I Ching*, references to the Buddha, and specific maxims associated with Zen literature. The "Lecture on Something," in being among the first documents to contain such gestures, sheds light on Cage's growing involvement with Zen.

Unlike his interest in Indian philosophy and the aesthetics of Coomaraswamy, the specifics of Cage's early exposure to Taoist and Buddhist thinking remain cloudy.[46] It is known that he received a copy of the *I Ching*, the Chinese 'book of changes', as a gift from his then-student Christian Wolff in 1951, and that he attended lectures given by Zen scholar D.T. Suzuki in 1952 and perhaps 1951.[47] It is not known, however, when his first contact may have taken place with the other Taoist and Buddhist sources that informed

---

[44] Ibid., 132.

[45] Feldman was perhaps the first to point this out. After hearing the lecture, someone asked him if he agreed with what Cage had said about his music. Feldman was to have replied, "That's not me; that's John." See the preface to "Lecture on Something" (c. 1951-52) in *Silence*, 128.

[46] Patterson, 134.

[47] Ibid., 142. Cage no doubt had knowledge of Suzuki prior to attending his lectures, however. He makes reference to Suzuki's publications in a letter to Boulez dated 17 January, 1950. See Jean-Jacques Nattiez, ed., with Francoise Davoine, Hans Oesch, and Robert Piencikowski, *The Boulez-Cage Correspondence*, trans. and edited by Robert Samuels (Cambridge, England: Cambridge University Press,

his writings in the early 1950s, notably the *Tao Te Ching* of Lao-tzu and Huang-po's *Doctrine of Universal Mind*. Also difficult to prove is any specific, causal link between Cage's exposure to these writings and subsequent (or simultaneous) changes in his aesthetic; Pritchett notes, for example, that Cage's "understanding of Zen was shaped as much by his compositional concerns as his composition was shaped by his interest in Zen."[48] The connections are nevertheless striking.

Perhaps the Zen concept most related to Cage's emerging aesthetic was that of 'interpenetration'. He summarized the thoughts posed by Suzuki on the concept:

> Interpenetration means that [everything, everyone] is moving out in all directions penetrating and being penetrated by every other one no matter what the time or what the space. So that when one says there is no cause and effect, what is meant is that there are an incalculable infinity of causes and effects, and everything in time and space is related to every other thing in time and space.[49]

Applied to music, this idea of the related-ness of all things can be seen as an analogue to the notion of 'no-continuity' Cage espoused in the "Lecture on Something." For, if all things are by their nature interconnected and penetrate one another, then any form that comes to fill an empty rhythmic structure is continuous, as well. The adoption of such a position led Cage to compose works that have been described by many as non-teleological, or as lacking goal-orientation. Such descriptions could not be more apt, for Cage had moved past any desire to effect a sense of 'artificial' progression in his music,

---

1993), 50; originally published in French and English as *Pierre Boulez / John Cage: Correspondance et documents* (Winterthur: Amadeus Verlag, 1990, and Basel: The Paul Sacher Stiftung, 1990).

[48] Pritchett, *The Music of John Cage*, 74. Suggesting a direct link from Eastern ideas to his music, however, Cage once commented, "As soon as I began to study oriental philosophy, I introduced it into my music." See John Cage and Daniel Charles, *For the Birds: in conversation with Daniel Charles* (Boston: Marion Boyars, 1981), 41; originally published in French as *Pour les oiseaux* (Paris: Editions Pierre Belfond, 1976).

[49] Cage, "Composition as Process: III" (1958) in Silence, 46-47.

instead concerning himself with creating music that mirrored the spontaneous, unpredictable nature of life itself.[50]

Rhetoric relating life and art may be found throughout Cage's writings from 1949 forward. This was one of the ways in which he celebrated the music of Feldman in the "Lecture on Something," by pointing out its similarity to the world around it:

> Life goes on very much like a piece by Morty Feldman. Someone may object that the sounds that happened were not interesting. Let him. Next time he hears the piece it will be different, perhaps less interesting, perhaps suddenly exciting.[51]

Furthermore, Cage was at this time beginning to view his art not only as similar to the world around it, but as a part of it. He contrasted this view with a commonly-held conception of Western art, bound with notions of permanency and separated from its environment. In the "Lecture on Nothing" he had warned against appreciating art in such a manner, for at any moment the 'real world' may encroach upon one's sense of isolation: "[…] a telephone may ring, or the airplane come down in a vacant lot." He followed this with one of his most poetic statements on the interpenetration of all things, demonstrating the connections that exist all around us: "A piece of string or a sunset, possessing neither, each acts and the continuity happens." Perhaps his most esoteric gesture in this vein was comprised by the follow-up question-and-answer session to the "Lecture on Nothing," in which Cage demonstrated 'no-continuity' by answering all questions posed to him with

[50] The connection between art and life typifies those art forms associated with Zen, and may be seen clearly in the Japanese poetic genre of Haiku. Suzuki characterizes the poet Bashô (1643-1694), perhaps Haiku's most famous practitioner, as a "passionate lover of nature." He describes an event in the poet's life that depicts the spontaneity of nature, connecting it with the epiphany of enlightenment: "Questioned by his [Zen] master about the ultimate truth of things which existed even prior to this world of particulars, [Bashô] saw a frog leaping into an old pond, its sound making a break into the serenity of the whole situation. The source of life has been grasped […]." See D.T. Suzuki, "Zen and Japanese Culture" in *Zen Buddhism: Selected Writings of D.T. Suzuki*, ed. William Barrett (New York: Image Books, 1996), 286.

[51] Cage, "Lecture on Something" (c.1951-52) in *Silence*, 131.

one of six statements prepared in advance, statements bearing no topical resemblance to the lecture itself.[52]

Another connection between Cage's philosophy and Buddhist thought in this period concerns the idea of quiescence. From a general standpoint, the state of being Cage endorsed in the "Lecture on Nothing"—one of self-negation, of 'nothingness'—bears a tangential relation to most theological conceptions of quietude, or quiescence, as a means of spiritual enlightenment. Without question, Cage recognized the specific link to the idea of self-naughting described by Coomaraswamy and Eckhart. The language Cage used in the lecture, however, may place it even closer to a doctrine put forth by a line of Zen thinkers beginning with Hui-neng (638-713). They espoused the belief that one's attempting to purify the mind through quietude was a futile gesture, because one's mind was by its very nature pure; they referred to this true state as "mindlessness" or "no-mind" (*wu-hsin*). Rather than putting forth a labored effort to empty the mind, and make it susceptible to enlightenment, one must simply let go of the mind; as this occurs, one also allows passage of all thoughts and ideas through the mind, neither analyzing them nor retaining them.[53]

The follower of Hui-neng with whom Cage expresses familiarity was Huang-po (*d*. 850), whose *Doctrine on the Universal Mind*[54] he was to have read. Although very

[52] E.g., "My head wants to ache," "According to the Farmers' Almanac this is False Spring," "I have no more answers," etc.

[53] Alan Watts, *The Way of Zen* (New York: Pantheon Books, 1957; reprint, New York: Vintage Books, 1989), 93 (page citations are to the reprint edition).

[54] *Ch'uan Hsin Fa Yao*, or "Treatise on the Essentials of the Doctrine of Mind." It exists in translation as *The Huang Po Doctrine of Universal Mind*, trans. John Blofeld (New York: Grove Press, 1958).

similar to the teachings of Hui-neng and the other disciples, Huang-po's *Doctrine of Universal Mind* expresses many of these beliefs with greater clarity.[55] He wrote,

> In former times, men's minds were sharp. Upon hearing a single sentence, they abandoned study and so came to be called "the sages who, abandoning learning, rest in spontaneity." In these days, people only seek to stuff themselves with knowledge and deductions, placing great reliance on written explanations and calling all this the practice.[56]

Transferred to the musical realm, this meant the emergence of sounds required nothing of us but our awareness; we needed only to let them " be themselves." We need not construct artificial continuities, speculate on their meaning, or intellectualize as to their significance. In the "Lecture on Something" Cage makes it clear that Feldman's music does not require, and should not be subject to, such ruminations:

> Nothing has been said. Nothing is communicated. And there is no use of symbols or intellectual references. No thing in life requires a symbol since it is clearly what it is: a visible manifestation of an invisible nothing.[57]

Approaching music in a such a state of 'no-mindedness', Cage wrote, assures that our ears will be "in excellent condition."[58]

Perhaps the negation that Cage expresses in these lectures is best summarized by a succinct statement made by Shen-hui (668-770), another of Hui-neng's followers. Claiming that human nature is not a 'thing'—just as Cage denied the objectification of art works—he deduces that it is thereby 'nothingness'. Therefore, he stated, "seeing into one's self-nature is seeing into nothingness."[59]

---

[55] Watts, 99.
[56] Quoted in ibid., 100.
[57] Cage, "Lecture on Something" (c.1951-52) in *Silence*, 136.
[58] Cage, "written in request for a manifesto on music […]" (1952) in *Silence*, xii.
[59] Quoted in D.T. Suzuki, "The Zen Doctrine of No-Mind" in *Zen Buddhism: Selected Writings of D.T. Suzuki*, ed. William Barrett (New York: Image Books, 1996), 165.

Cage's interest in 'no-continuity' carried much significance with regard to his methods of composing music. If we return to his fourfold division of composition—structure, form, materials, and method—it may be observed that 'no-continuity', while existing within the realm of form, is determined by a piece's method. The twelve-tone method of composition, for example, was one in which (to Cage) a continuity was engendered at the exclusion of all other possibilities; so, too, he felt that functional harmony effected an artificial sense of continuity. By way of contrast, the method of Feldman's graphic scores, through indeterminacy, allowed for 'no-continuity' of form. Beginning in 1947, Cage had employed a method which he, too, felt would lead to such a form, basing it on collections of sound events he called gamuts.[60]

Cage's organization of materials into gamuts began with *Two Pieces for Piano* (1946) and the ballet score *The Seasons* (1947). Turning away from the free and 'undisciplined' compositional method used in the *Sonatas and Interludes*,[61] he sought instead to order his materials in a way that would suggest no harmonic progression—tonal or otherwise. To do so, he felt it necessary to create a body of sonorities as a pre-compositional act, *a priori*, with no knowledge of how the sounds would come to be used within the piece. This group of sonorities, the gamut, thus functioned to limit his freedom of choice in composing the piece,[62] as well as his ability to force harmonic or melodic continuity. Cage's use of gamuts developed from *Two Pieces for Piano* and *The*

[60] My understanding of Cage's use of gamuts in conjunction with *The Seasons* and *String Quartet in Four Parts* is based largely on Pritchett's examination of the same in *The Music of John Cage*, and Deborah Campana's treatment of the practice in her "Form and Structure in the Music of John Cage" (Ph.D. diss., Northwestern University, 1985).

[61] Cage described the compositional method used in the *Sonatas and Interludes* as one of "considered improvisation." See Cage, "Composition as Process," Part I (1958) in *Silence*, 19.

Seasons into a more disciplined approach in his *String Quartet in Four Parts* (1949-50), eventually evolving into a procedure based on charts of sounds in the *Concerto for Prepared Piano* (1950-51) and *Music of Changes* (1951).

In *Two Pieces for Piano*, Cage retained the pitch content of the sonorities in his gamut, but varied their voicings to suit his taste. In addition, since the sonorities in the gamut did not possess a rhythmic profile, he had to put them into some temporal framework (controlled ultimately, of course, by the piece's rhythmic structure). In *The Seasons*, he expanded the size of the gamut, but retained all the original voicings in transferring the sounds to the piece; this appears to be a trade-off with regard to the limitation of choice. Applying the sonorities to the piece, he created textures of melody and accompaniment by lengthening certain pitches while arpeggiating others. Many such choices were no doubt influenced by the role of the music in accompanying choreographed dance.

To Pritchett, Cage's use of the gamut in *Two Pieces for Piano* and *The Seasons* met only with partial success; while the result conveys a sense of "weakened harmonic motion," it is far from the sense of harmonic stasis that Cage envisioned.[63] This may be attributed to the amount of latitude Cage still allowed himself in creating rhythmic profiles for the sonorities, and especially in his choice of how the sonorities would follow one another. Using the fourfold model of composition, this last component can be construed as the piece's method, i.e., its note-to-note procedure. In the case of *The*

---

[62] This limitation of materials being to some degree inspired by the limitations Cage experienced when working only with the modified pitches of his prepared piano. See Cage, "[*Sonatas and Interludes*]" in *John Cage*, ed. Kostelanetz, 76.

[63] Pritchett, *The Music of John Cage*, 44.

Seasons, the method was still decidedly undisciplined. With his next major work, the *String Quartet in Four Parts*, Cage's approach to method began to change.

The quartet is based a relatively small gamut of thirty-three sonorities, and the sonorities appear within the piece nearly exactly as they do in the gamut: played by the same instruments, in the same voicings. Furthermore, Cage does not modify the lengths of individual pitches within the sonorities as he did in *The Seasons*, breaking chords apart and creating arpeggios, extending certain tones to create melodies, etc. Instead they nearly always appear as verticalities; the melody one hears in the piece is the voice-leading among the uppermost pitches in each sonority. Cage describes all this in a letter to Boulez dated 22 May, 1951:

> The Quartet uses a gamut of sounds, some single and some aggregates, but all of them immobile, that is staying not only in the same register where they originally appear but on the same strings and bowed or produced in the same manner on the same instruments. There are no superpositions, the entire work being a single line.[64]

Cage's claim that entire work is a "single line" implies that he felt he had negated the function of harmony (and thus a sense of artificial harmonic continuity); in another letter he boasted that the quartet possesses "no counterpoint and no harmony."[65, 66] He explained that his method, until the third movement, is "uncontrolled and spontaneous"—this being similar to the method of *The Seasons*. In the third movement, however, he begins to use what he refers to as a "strictly canonic" procedure, his new 'disciplined'

---

[64] John Cage, letter to Pierre Boulez, 22 May, 1951. In Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 92.

[65] John Cage, letter to Pierre Boulez, February, 1950. In ibid., 55.

[66] The notion of the quartet containing only "one line" and lacking harmony may seem at odds with its title, *String Quartet in Four Parts*. The 'four parts' refers to the piece's quasi-programmatic division into four movements mirroring the Indian conception of the four seasons, as described by Coomaraswamy. See Paul Griffiths, *Cage* (London: Oxford University Press, 1981), 21.

method. The designation of "canonic" may be misleading, however, for there is clearly no polyphonic treatment of melody. Rather, he meant simply that the patterns he selected from the gamut are treated in a disciplined manner, involving such devices as palindromes and retrogrades.[67]

If Cage's goal had been to compose music in which no harmonic progression could be discerned, he had succeeded. The quartet's third movement conveys a sense of aimlessness and emotional detachment that begs comparison to the music of Erik Satie, whom Cage admired greatly. He lauded Satie's music for two primary reasons, one dealing with its structure and the other with its form. Satie's conception of musical structure, Cage wrote, was entirely based on temporal units, not on harmony; the form of his music was one of stasis, or of repetition. Cage's debate with a music critic over the value of Satie's music, written the same year he wrote the *String Quartet in Four Parts,* stands as a testament to the conviction of his newfound aesthetic and his ability to transfer it into musical practice.[68]

Cage's next major composition would bring him into contact with a genre he had yet to approach: the concerto. As one deconstructs the *Concerto for Prepared Piano and Chamber Orchestra*, myriad threads reveal themselves; some are linked to Cage's past, some pointing towards music to come. In the former group is the solo instrument itself, the prepared piano—an emblem of the composer's work from the 1940s. Also tried and true is Cage's use of the rhythmic structure, a device whose absolute necessity he expounded upon in 1949, but which he would abandon by 1953. In transition was his use

[67] For an analysis of these techniques see Deborah Campana's "On Cage's *String Quartet in Four Parts*" (1988) in Kostelanetz, ed., *Writings About John Cage* (Ann Arbor: University of Michigan Press, 1993), 82-83.

of sound gamuts, a relatively new construct for organizing musical materials. In the concerto the gamuts would evolve into two-dimensional charts of sonorities, similar to the ones that would form the basis of *Music of Changes*. Along with this change in the gamuts/charts themselves came a new way of working with them, a change in method, marked in particular by Cage's employment of chance procedures as a means of presenting his material.

[68] See "Satie Controversy" (1950) in *John Cage*, ed. Kostelanetz, 89-92.

CHAPTER 3

THE *CONCERTO FOR PREPARED PIANO AND CHAMBER ORCHESTRA*: ANALYSIS

Overview

Cage completed the *String Quartet in Four Parts* in February of 1950 and shortly thereafter composed *Six Melodies* for violin and keyboard, for which he used a similar method as well as the same gamut of sonorities; he referred to the piece as "simply a postscript to the Quartet."[1] He then turned his thoughts to the concerto, writing to Boulez in June of that year,

> I am about to embark on a new work, but I find myself stupid, without sensibility, etc. The same old story. It's probably [going to be scored for] string orchestra and prepared piano.[2]

Despite these apparent difficulties, Cage was able to complete the first movement of the concerto two months later, in August of 1950. The second movement followed in October, and the third movement was finished in February of the next year. Cage's letters to Boulez also indicate that he paused in between composing the second and third movements in order to write the piece *Sixteen Dances*, used to accompany a dance by Merce Cunningham.[3]

---

[1] John Cage, letter to Pierre Boulez, 22 May, 1951. In Jean-Jacques Nattiez, ed., with Francoise Davoine, Hans Oesch, and Robert Piencikowski, *The Boulez-Cage Correspondence*, trans. and edited by Robert Samuels (Cambridge, England: Cambridge University Press, 1993), 60-61; originally published in French and English as *Pierre Boulez / John Cage: Correspondance et documents* (Winterthur: Amadeus Verlag, 1990, and Basel: The Paul Sacher Stiftung, 1990).

[2] Ibid. Cage would later decide to expand the orchestra to include winds and percussion.

[3] John Cage, letter to Pierre Boulez, 18 December, 1950. In ibid., 78.

The Cage-Boulez letters constitute an important primary source regarding the activity of both composers between 1949 and 1953, and these letters contain Cage's most detailed account of the compositional techniques he employed in writing the concerto in 1950 and 1951. Also informative are Cage's comments on the work elicited during interviews with the French musicologist Daniel Charles in 1970.[4] In these statements Cage sheds light on his personal conception of the work, and the ways in which the piece reflected his emerging aesthetic at the time of its composition.

The piece's governing theme may be summarized as the presentation and subsequent reconciliation of opposing forces. In the context of Cage's evolving ideas about art, this theme takes many forms: the duality of intention and non-intention, expression and non-expression, freedom and discipline, even sound and silence. All of these function as a narrative of ideas through the course of the work, the reconciliation of dualities arriving with the piece's final movement. Cage himself described the concerto in similar terms, positioning the piano and orchestra in roles of opposition:

> I made it into a drama between the piano, which remains romantic, expressive, and the orchestra, which itself follows the principles of oriental philsophy. And the third movement signifies the coming together of things which were opposed to one another in the first movement.[5]

In light of this polarity of forces, Cage's concerto truly fulfills the traditional expectations of the genre, i.e., it is not simply a 'concerto' in name only.[6]

---

[4] John Cage and Daniel Charles, *For the Birds: in conversation with Daniel Charles* (Boston: Marion Boyars, 1981; originally published in French as *Pour les oiseaux* (Paris: Editions Pierre Belfond, 1976).

[5] Ibid., 41.

[6] It is worth noting that the piece's title, *Concerto for Prepared Piano and Chamber Orchestra*, bears enough resemblance to Cage's later *Concert for Piano and Orchestra* (1957-58) so to have caused some degree of confusion in the body of 20th-century musical literature. The *Concert for Piano and Orchestra* features piano without preparations, and presents no piano/orchestra dichotomy in the solo/*ripieno* tradition of the concerto genre; thus, Cage chose to drop the 'o' and call the piece a 'Concert' rather than a

The "drama" that Cage speaks to suggests a conflict of philosophical positions, alluded to at the start of this essay. By framing the work around this conflict, Cage characterized his own beliefs as being in a state of flux. He explained that the piece demonstrated the lack of resolution he felt in 1950 and 1951 regarding two possible courses of action: whether to allow sonorous events to 'emerge' in the spontaneous and unforced manner discussed previously, or to resume composing with the subjectivity of his personal taste. At the time, the best musical example of the latter approach—certainly the most famous—can be found in his *Sonatas and Interludes* for prepared piano; the best example of the former, in his *String Quartet in Four Parts*. It seems therefore no coincidence that Cage chose the prepared piano to represent freedom and subjective taste in the concerto, and the ensemble to represent discipline and non-expression, rather than vice-versa.

Although helpful in his description of the aesthetic drama framing the concerto, Cage was less than thorough in revealing the specifics of his compositional technique. Luckily, the composer's original manuscripts for the work have shed light on this matter, exposing details of his working methods hitherto unknown. These sources are preserved in two archives, the collection previously held by David Tudor and now housed in the Getty Museum in Los Angeles, and the extensive collection of Cage manuscripts in the Library of the Performing Arts at Lincoln Center.

The manuscripts from the Tudor collection formed the basis of Pritchett's study of the concerto in his 1988 dissertation. The most valuable of these sources were worksheets Cage used in composing the piece's second and third movements. On these

---

'Concerto.' It is not at all uncommon, however, to find incorrect and misleading references to the

sheets Cage recorded coordinates of letters and numbers that revealed the technique he used in transferring sonorities from his charts (the expanded gamuts) into the piece itself. Pritchett was thus able to analyze the second and third movements as a series of moves upon the charts and, in doing so, was able to examine Cage's compositional methods. As will be discussed later, these methods include Cage's superimposition of geometric patterns upon the charts in the second movement, and his application of chance procedures derived from the *I Ching* in the third movement.

The second group of compositional materials, those currently housed in the Library of the Performing Arts at Lincoln Center, contain two of Cage's three original charts for the piece. These were not known to Pritchett at the time he studied the Tudor worksheets, and were likely still in Cage's possession. Examination of these charts allows for two sets of results: first, the corroboration of Pritchett's findings with respect to the second and third movements of the concerto, and second—and of most importance to the study at hand—the elucidation of Cage's compositional methods in the first movement, not previously examined in the available literature.[7]

Scoring: Orchestration and Piano Preparation

The *Concerto for Prepared Piano* was not only Cage's first foray into the concerto genre, but also his first orchestral composition unaffiliated with dance (the

'Concerto for Piano and Orchestra' (no such piece exists) in otherwise useful discourse on Cage's music.

[7] Besides Pritchett's work, the only other published research on the concerto appears in Howard Kessler's "Rhythmic Cycles and Self-Similarity in John Cage's *Concerto for Prepared Piano and Chamber Orchestra*, First Movement," *Sonus* 15/2 (Spring 1995): 113-129. The article deals primarily with the component of structure and thus does not address Cage's compositional methodology in the first movement, i.e., his handling of the chart materials. Within the concerto's first movement Kessler identifies the presence of structures based on the Fibonacci series and on the Golden Section that my analysis does not corroborate.

orchestral ballet score to *The Seasons* having been written three years prior, in 1947). His early plans for scoring the work for string orchestra without winds and percussion underwent substantial revision, most likely as he began constructing the concerto's charts of sonorities; as will be discussed later, the division of instruments by classification is a prominent feature in the organization of the charts. Cage's chamber orchestra consists of twenty-five players, including the soloist, and there is no doubling on any part. Rather than favoring any single group of instruments, the orchestration presents a fairly balanced assortment of strings, woodwinds, brass, and percussion.[8]

The concerto's percussive orchestration deserves additional comment. In addition to the common assortment of drums, cymbals, and tympani, Cage also calls for several non-traditional instruments—as one might expect given the composer's previous work with experimental media. The concerto features the sounds of a metal wastebasket being struck, a resonating gong being dipped in water, an electric buzzer, a radio, a recording of a generator, even a four-foot coil of wire being inserted onto the tone-arm of an amplified record player.[9] Needless to say, these wonderfully Cagean instruments are quite capable of creating a din within musical textures that are otherwise frequently serene. This distances the concerto somewhat from its predecessor, the *String Quartet in Four Parts*, which exudes a certain sense of calmness and hushed placidity. The quartet is, in this sense, comparable to the serene early works of Morton Feldman, whom Cage lauded in

[8] Two violins, viola, cello, double bass, horn, trumpet, tenor trombone, bass trombone, tuba, piccolo/flute (one player), oboe, English horn, two clarinets, bassoon, glockenspiel, xylophone, celesta/unprepared piano (one player), harp, and an assortment of percussion played by four individuals.

[9] Cage even makes reference to this coil of wire in a humorous passage from the "Lecture on Nothing." He writes, "The most amazing noise I ever found was that produced by means of a coil of wire attached to the pickup arm of a phonograph and then amplified. It was shocking, really shocking, and thunderous." See Cage, "Lecture on Nothing" (1950) in *Silence* (Middletown, CT: Wesleyan University Press, 1961), 117.

the "Lecture on Something." With the concerto, however, he seems to acknowledge that the "imitation of nature in her manner of operation" requires that one allow the raucous to emerge alongside the tranquil; thus, his charts contain *pianissimo* sonorities along with *fortissimo* ones, including all the bells and whistles, buzzers and gongs.[10]

The piano preparations Cage requests for the solo instrument are fairly elaborate and specified with great detail in the score's preface. The inserted objects remain in place, unaltered, through the piece's entire duration—this being similar to the composer's use of the prepared piano in earlier works, but unlike his practice in some of his later pieces.[11] As with the piano-preparation instructions found in most of his compositions, Cage lists the nature of the objects to be utilized (the usual assortment of nuts, bolts, screws, etc.) and their locations on individual strings. He also specifies each object's exact distance from the piano's bridge, this being unlike his practice in other works in which his instructions are less detailed.[12] Unique among the preparations Cage calls for is a plastic bridge that he felt brought about additional microtones from the piano. He described it in two separate letters to Boulez:

> […] the piano preparation has many microtonal pitch relations, brought about by an object, the height of which can be controlled, that rests on the sounding board and becomes a bridge (making the strings other & similar lengths).[13]
>
> […] its preparation, which, by the way is the most complicated I have ever effected and has as a special characteristic a bridge which is elevated from the

[10] Cf. Cage's comment to Boulez, "Percussion sounds in the orchestra are integral parts of the gamuts." See John Cage, letter to Pierre Boulez, 1 September, 1950, in Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 74

[11] In the piece *34'46.776'' for a Pianist* (1954), for example, the piano preparations are modified during the course of the performance.

[12] Cage appears to have gone back and forth on the practice of specifying measurements for his piano preparations. See James Pritchett, *The Music of John Cage* (Cambridge, England: Cambridge University Press, 1993), 24.

[13] John Cage, letter to Pierre Boulez, 1 September, 1950. In Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 74.

> sounding board of the piano to the strings and so positioned as to produce very small microtones.[14]

In these letters, Cage does not describe the method he used to determine which strings would be modified by preparations. One is left to assume that his decisions were based simply on personal taste and discretion, as had been the case in *Sonatas and Interludes*.[15]

Rhythmic Structure

From the perspective of Cage's fourfold model of composition, it appears that structure is the only dimension within the concerto to remain consistent through the entire course of the work. This is to say that the other three components—materials, method, and form—all evolve throughout the piece, in some manner or another. The materials utilized, namely the charts of sonorities, do not remain the same from start to finish, nor does the method through which they are handled; logically, as a result, the form evolves as well. The domain of structure, however, remains the piece's grounding mechanism and the foundation of its consistency.

The concerto is built on the same micro-macrocosmic rhythmic structure that Cage had first designed in 1937, and with which he had become quite familiar by 1950. As with his prior works, he conceived this structure as an empty template onto which the piece's form—its musical content—could be laid; or, to invoke his metaphor from the "Lecture on Nothing," it was "an empty glass into which at any moment anything may be poured." By 1950, this type of rhythmic structure had become such a common fixture of

[14] John Cage, letter to Pierre Boulez, 22 May, 1951. In ibid., 93.

[15] Cage wrote that the piano preparations in the *Sonata and Interludes* were chosen "as one chooses shells while walking along a beach." See Cage, "Composition as Process," Part I (1958) in *Silence*, 19.

his music—albeit a significant one—that, in describing the concerto to Boulez, Cage glosses over the feature; he simply comments that "the rhythmic structure, with which you are familiar in my work, remains as the basis of activity."[16]

The structure of the concerto is represented by the numeric sequence <3, 2, 4, 4, 2, 3, 5>, and, as in Cage's other works featuring the so-called 'square-root' construction, it operates on a number of different levels. The largest of these levels spans the entire work and results in the sequence being broken into three segments that correspond with the work's three separate movements. Because the tempo stays constant across these movements (half-note = M.M. 54-56) the conceptual basis of the rhythmic structure as a function of temporality remains intact. The first three numbers in the structure's sequence (3, 2, 4) are the structural proportions that correspond with the first movement; the next three numbers (4, 2, 3) are those that correspond with the second movement; and the final number (5) corresponds with the third movement (see figure 2).

Figure 2. Segmentation of rhythmic structure by movement, *Concerto for Prepared Piano and Chamber Orchestra*.

Overall structural proportions: <3, 2, 4, 4, 2, 3, 5>

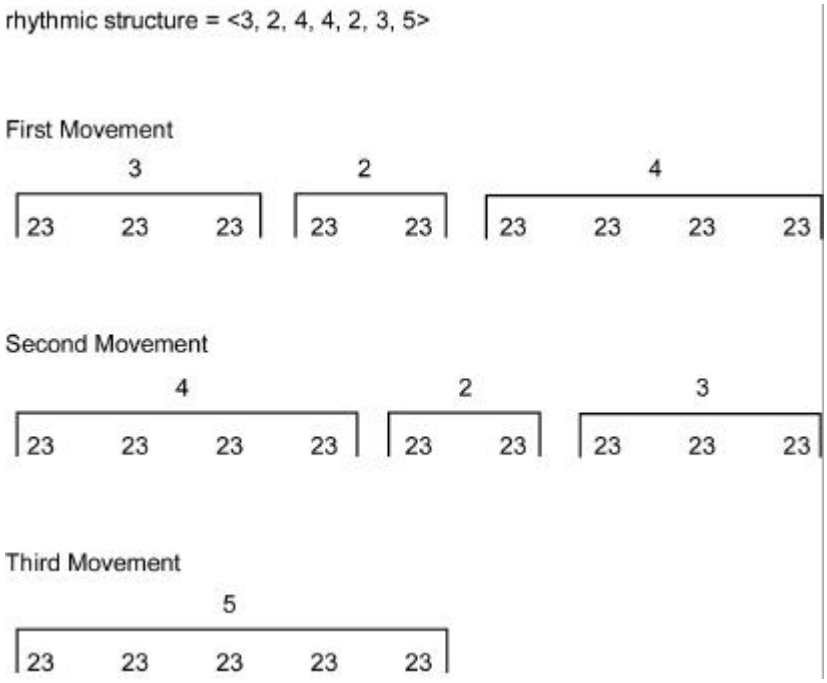
movement:	1st	2nd	3rd
proportions:	<3, 2, 4>	<4, 2, 3>	<5>

Apart from its overarching division into three movements, the work may be broken down into seven large sections, corresponding with the seven numerals in the sequence. Each section further divides into groups, just as discussed previously with

[16] John Cage, letter to Pierre Boulez, 22 May, 1951. In Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 93.

regard to the "Lecture on Nothing" and other works. The number of groups within each of the seven sections is dependent upon the numeric sequence, <3, 2, 4, 4, 2, 3, 5>. The first section has three groups, the second section has two groups, the third section has four groups, and so on. Each of these groups contains twenty-three measures (see figure 3). Using the terminology Cage sometimes invoked, the concerto therefore consists of 'twenty-three groups of twenty-three measures', or '23 x 23 measures'.[17]

Figure 3. Partial depiction of rhythmic structure, *Concerto for Prepared Piano and Chamber Orchestra*.



[17] Or, in the most succinct formulation of the square-root structure, '23^2 measures'.

Each of the concerto's groups is further divisible into seven phrases that correspond to the numeric sequence. The first phrase of each group, therefore, is three measures long, the second phrase is two measures long, the third phrase is four measures long, etc., such that the lengths of the phrases always add up to a total of total twenty-three measures. The start of each phase is denoted in the score by the appearance of a new rehearsal number; after seven such phrases, the start of each new group is denoted by the appearance of a double barline. A complete representation of the concerto's rhythmic structure may be seen in figure 4.

The individual phrase, therefore, represents the most localized level to which the rhythmic structure's influence extends. It is at this level, as well, that the structure aligns itself with Cage's method, his treatment of the charts. Discussion of this and other aspects of the composition requires a narrowed focus, addressing the movements on an individual basis.

Movement One

As he began to compose the concerto, Cage knew that he would base the composition at least in part on a preconceived body of sonorities, as he had done previously in the quartet and in the *Six Melodies*. As mentioned above, however, this collection of source materials was organized differently than the gamuts of those former works. Cage wrote to Boulez,

Figure 4. Complete depiction of rhythmic structure, *Concerto for Prepared Piano and Chamber Orchestra*

rhythmic structure = <3, 2, 4, 4, 2, 3, 5>

First Movement

3			2		4			
23	23	23	23	23	23	23	23	23
3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2
4	4	4	4	4	4	4	4	4
4	4	4	4	4	4	4	4	4
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
5	5	5	5	5	5	5	5	5

Second Movement

4				2		3		
23	23	23	23	23	23	23	23	23
3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2
4	4	4	4	4	4	4	4	4
4	4	4	4	4	4	4	4	4
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
5	5	5	5	5	5	5	5	5

Third Movement

5				
23	23	23	23	23
3	3	3	3	3
2	2	2	2	2
4	4	4	4	4
4	4	4	4	4
2	2	2	2	2
3	3	3	3	3
5	5	5	5	5

> Then I began to write the Concerto for prep. pn and chamber orchestra (25 players). A new idea entered which is this: to arrange the aggregates not in a gamut (linearly) but rather in a chart formation. In this case the size of the chart was 14 by 16.[18]

As will be discussed below, Cage's new organization of the collection into a two-dimensional, grid-like chart of sonorities—rather than a one-dimensional gamut—yielded new opportunities with regard to his compositional method, namely the manner in which he transferred the sonorities from the chart into the work itself.

The new chart also differed from its progenitors in its degree of specificity. Although the gamut used in the quartet was quite detailed, the aggregates needed only to be assigned to one of the four possible instruments. In the concerto, however, Cage was working with a larger ensemble and could dictate exactly which orchestral instrument, or combination of instruments, would be associated with which sonority. In the previous orchestral score that featured precomposed pitch collections, *The Seasons*, this aspect of the compositional process was left to the composer's discretion; thus, when the gamut's sonorities reappear throughout that piece, they are colored by different instrumental timbres and take on different characters. This is most certainly not the case in the concerto. Regarding the chart's organization, Cage wrote,

> […] 14 different sounds produced by any number of instruments (sometimes only one) (and often including percussion integrally) constitute the top row of the chart and favor (quantitatively speaking) the flute. The second row of the chart favors the oboe and so on. Four rows favor the percussion divided: metal, wood, friction, & miscellaneous (characterized by mechanical means, e.g., the radio). The last four favor the strings. Each sound is minutely described in the chart: e.g. a particular tone, *sul pont* on the second string of the first vn. with a particular flute tone and, for example a wood block.[19]

[18] John Cage, letter to Pierre Boulez, 22 May, 1951. In Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 93.

[19] Ibid.

The chart Cage describes, used in the first and second movements of the concerto, is part of the collection in the Library of the Performing Arts at Lincoln Center and appears exactly as the composer describes it.[20] Because of its large size, the chart is broken up into four separate, bifoliate sheets, each of these containing four of the total sixteen rows. As Cage puts it, each of the rows "favors" a particular instrument, if only marginally; this means that they contain more sonorities featuring the favored instrument than any other instrument. Nevertheless, the rows remain quite diverse with regard to instrumentation.

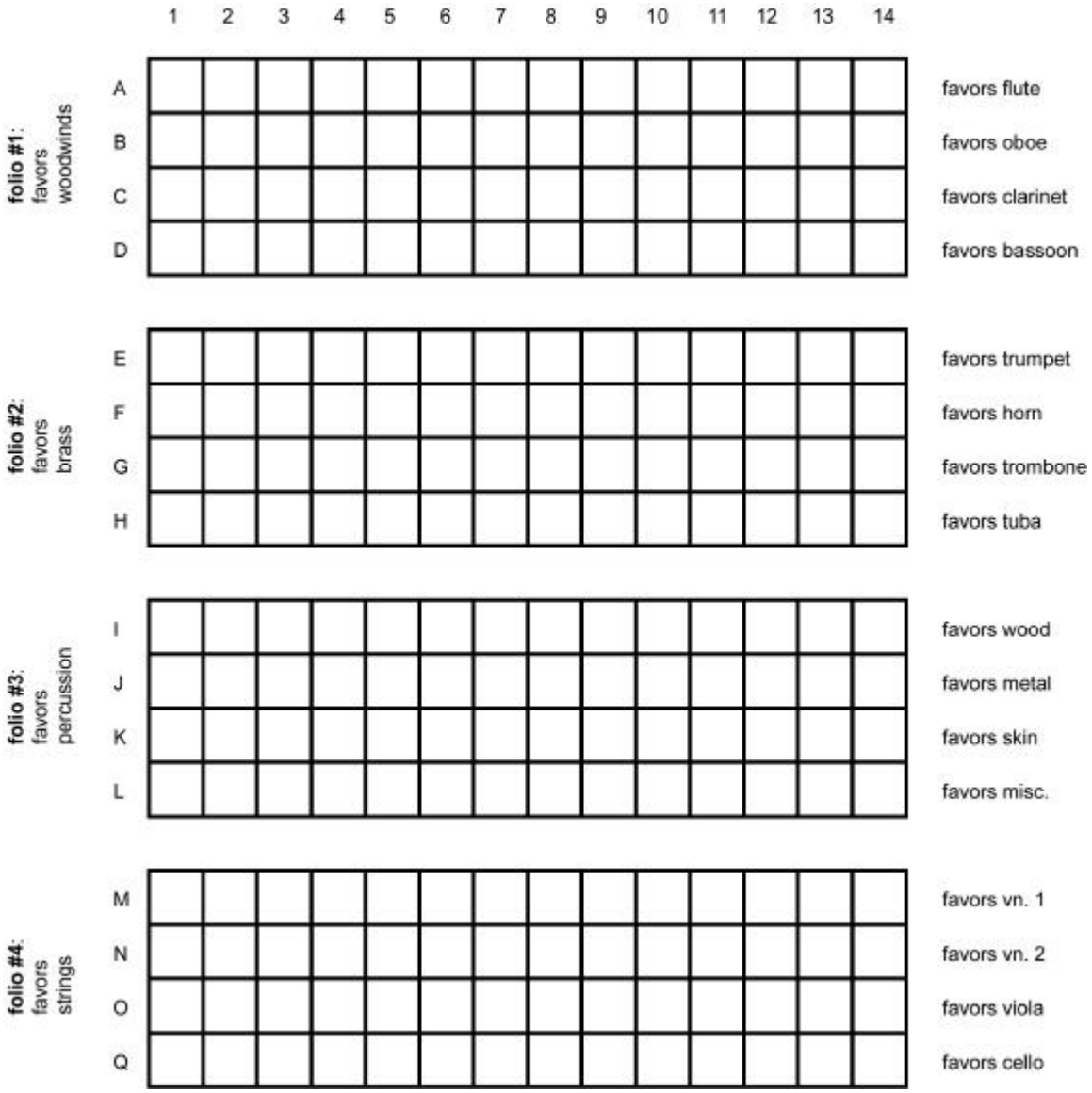
The chart's four folios correspond to the classification of orchestral instruments into four categories (strings, brass, woodwinds, and percussion). As discussed previously, Cage composed the piece for a well-balanced orchestra and, in the score, he divides the staves into groups of four: four woodwind instruments, four brass instruments, and so on. So, too, his chart is divided in such a way that the first folio contains four rows favoring woodwinds, the second folio favoring brass, the third folio favoring percussion, and the fourth folio favoring strings.[21] Cage appears to have organized the chart in a way that encourages an even distribution of instrumental color, a practice that may be seen in his method of extracting the sonorities from the chart, as well. Interestingly, although there is a principle underlying the organization of the chart's rows (the quantitative 'favoring' of certain instruments, albeit loosely), there seems to be no such organizational mechanism in place for the columns. The chart is labeled in the manner of a spreadsheet,

[20] Manuscript sketches and compositional materials for the *Concerto for Prepared Piano and Chamber Orchestra*, JBP 94-24 Folder 945, Library of the Performing Arts at Lincoln Center, NY.

[21] The preponderance of 'fours' is quite apparent. There are four rows per folio and four folios per chart, with each folio representing one of the four groups of instruments. On the most local level, within each row, Cage even notates his aggregates on four staves. This all suggests comparison to the numerology of Cage's rhythmic structure, indicating that numerologically telescopic modes of organization may have played perhaps an even greater role in Cage's work than previously acknowledged. Of course, equally plausible is that it may all have been a coincidence.

with numbers (1-14) identifying the columns and with letters (A-Q) identifying the rows.[22] For a visual representation of the chart, see figure 5.

Figure 5. Layout of orchestral chart, *Concerto for Prepared Piano and Chamber Orchestra*.



[22] The lettering of the rows skips 'P,' perhaps to avoid confusion with the designation for 'piano.'

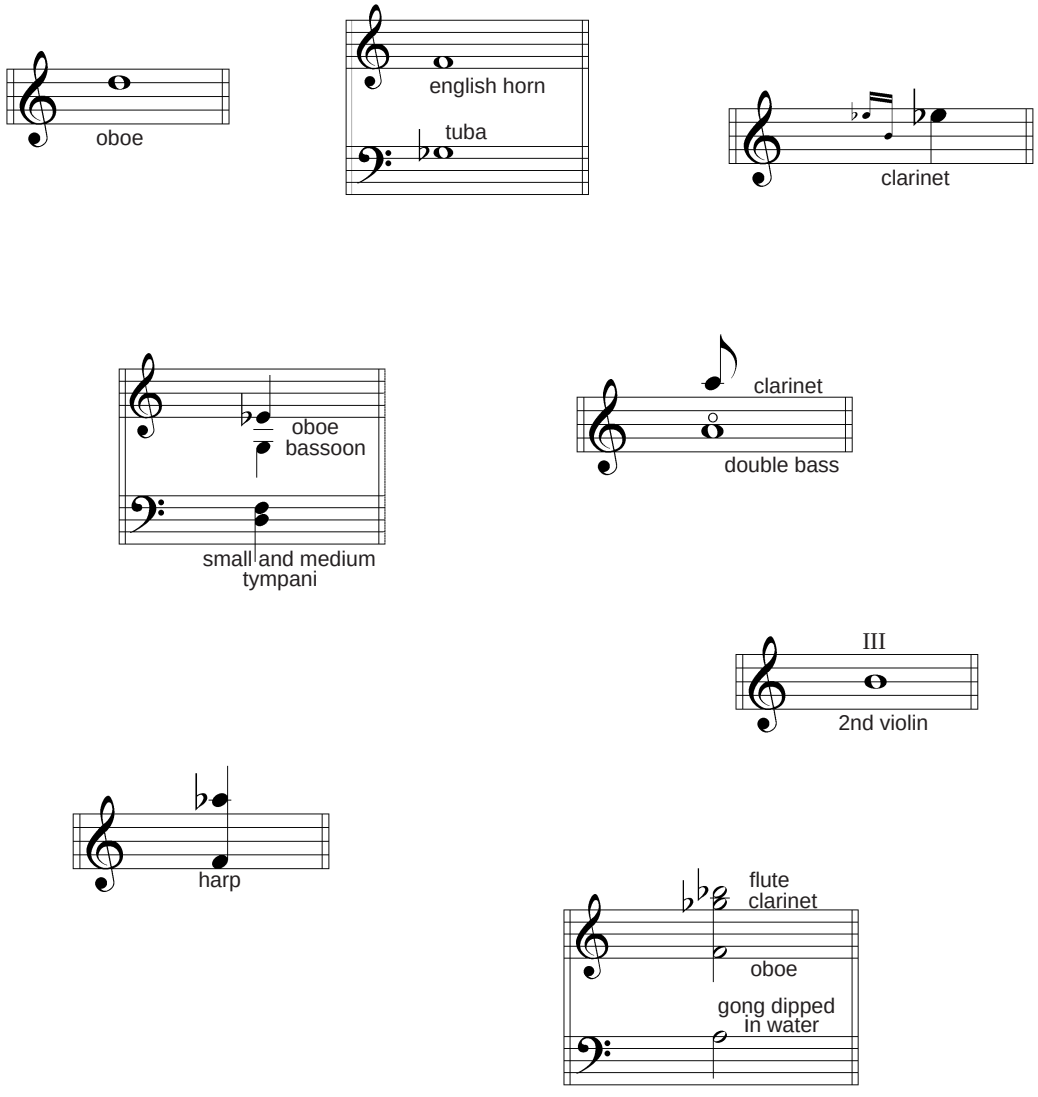
The content of the chart is exceptionally diverse. Cage's sonorities may appear as simple as a single tone, associated with a single instrument, or as complex as an elaborate aggregate of microtonal pitches colored by a variety of instrumental timbres, preceded by grace notes or scalar flourishes. Nevertheless, they share certain characteristics.

All exist as verticalities, in that the individual note attacks occur simultaneously. The pitches within an aggregate may be notated with different values of duration, e.g., half notes and eighth notes, but this is irrelevant because Cage modifies the notes' lengths when transferring the sonorities from the chart into the piece itself. Nevertheless, he always maintains the simultaneity of attack points within each sonority. Another common characteristic is that none of the sounds are given dynamic indications on the chart. Otherwise, the specificity of notation is incredibly precise; the composer even specifies modes of tone production (*pizzicato*, *arco*, etc.), fingerings, and other details. See figure 6 for examples of some of these chart sonorities.

The Tudor worksheets for the second and third movements, the basis of Pritchett's analysis, were thorough enough to allow him to offer a preliminary outline of the chart's structure and to partially reconstruct portions of the chart itself.[23] Without access to the complete chart, however, he was unable to posit a theory on Cage's methodology in the first movement, and thus dedicated the bulk of his study to the concerto's second and third movements.

[23] See James W. Pritchett, "The Development of Chance Techniques in the Music of John Cage, 1950-1956" (Ph.D. diss., New York University, 1988), 39-56.

Figure 6. Examples of sonorities from orchestral chart, *Concerto for Prepared Piano and Chamber Orchestra.*



With the complete chart in hand, however, one may trace Cage's steps backwards, matching each sonority in the first movement to its source in the chart. This makes possible the formulation of a worksheet of chart coordinates depicting Cage's method, in effect reversing the procedure Pritchett employed to analyze the remaining movements.

The polarity between performing forces within the concerto is at its strongest in the piece's first movement. It is here that the solo piano acts as the voice of 'romantic expression', its material freely composed and thus bound with Cage's personal intention and taste. On the opposite pole is the orchestra, which Cage designed to adhere to the 'principles of Oriental philosophy' in the anti-teleological manner by which it presents the chart materials; it thus relays the concept of 'no-continuity' he espoused so eloquently in the "Lecture on Something." Regarding the method he applied to the chart materials in the first movement, Cage wrote the following:

> The entire first movement uses only 2 moves, e.g. down 2, over 3, up 4, etc. This move can be varied from a given spot on the chart by going in any of the directions. The orchestra (in the first mvt.) was thus rigorously treated, while the piano remained free, having no chart […][24]

The first two sentences in the above quote serve as an introduction to the composer's method in this opening movement, though ultimately a misleading one. The first sentence seems to suggest that Cage is using the term 'move' to refer to a single motion on the chart, ostensibly from one sonority to another. Considered along with the second sentence, however, it appears instead that he is using the term to refer to a *collection* of single motions on the chart; he refers to his previous example ("down 2, over 3, up 4, etc.") as "this move," i.e., one collection of motions upon the chart. Even

given this interpretation—and taking into account many other possibilities as well—the quote still does not present a completely accurate account of his methodology, as will be fully elaborated upon in the discussion to follow. It is likely that Cage, at the time he wrote the letter to Boulez, had begun to forget the intricacies of his own technique; after all, by that date (22 May, 1951) he had already completed all three movements of the concerto (each with a different chart method), *Sixteen Dances*, *Imaginary Landscape No. 4*, and a portion of the staggering *Music of Changes*. In the interest of clarity, I will use the following terminology with regard to Cage's chart method: a 'move' is one, single motion on the chart, whereas a 'pattern' constitutes a collection of moves. I will further identify patterns as either 'autonomous' or 'composite' based on their correlation with the phrases of the rhythmic structure.

As mentioned previously, it is at the level of the individual phrase that the concerto's rhythmic structure aligns itself with the chart-derived musical content; this is where structure and form correlate with one another. This union is accomplished through the aforementioned patterns of chart moves. The vast majority of patterns are autonomous, in that they stand alone within single phrases of the rhythmic structure, in a one-to-one ratio. Although the phrases are established at the outset by Cage's rhythmic structure, their content is defined by the patterns of chart moves; in this sense a parallel may be drawn to the manner in which harmony and/or melody act to define phrases in tonal music. The essential difference, however, concerns the issue of continuity; to Cage, the methodology of the chart patterns allows for the emergence of 'no-continuity' within

[24] John Cage, letter to Pierre Boulez, 22 May, 1951. In Nattiez, ed., with Davoine, Oesch, Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 93.

his music, rather than the belabored, artificial sense of continuity he saw in tonal phraseology.

Cage's autonomous chart patterns in the first movement fall into three categories: those consisting of five moves, those consisting of eight moves, and those consisting of two moves. Among these, the pattern based on five moves is by far the most prevalent, and may be found within twenty-nine of the movement's fifty-six total phrases. Patterns comprised of eight moves are the second most common variety, and patterns based on two moves are the third most common.[25]

The patterns within each given variety (five-, eight-, and two-move) all share a common design. This design does not replicate itself precisely from pattern to pattern, as Cage suggested in the letter, even if one moves in different directions from the initial coordinate, but it does retain the same basic number of moves. Rather, the similarity of design among pattern varieties lies in *consistent usage of the chart's columns*. In the five-move patterns, for example, the first sonority is always drawn from column one, the second sonority from column eight, then third from column twelve, the fourth from column five, and the fifth from column six. Figure 7 shows the generic design of these five-move patterns when plotted onto a model of the chart (depicted without rows).

[25] These varieties of patterns are identified by the number of moves they contain, but one may also identify them by the number of sonorities they contain; the result is the same. Because the final move of any pattern is the move to the first sonority of the pattern that follows it, the number of 'inclusive' moves within any pattern is one less than the total number. For example, a five-move pattern, comprised of five sonorities, contains only four *inclusive* moves from the 1st to the 5th sonority. Thus, when patterns of moves are identified in the following discussion, it may appear at first that the patterns have been shortchanged by one move, but this is not the case; the inclusive moves just happen to be the ones relevant to the discussion.

Figure 7. Generic scheme of five-move patterns, *Concerto for Prepared Piano and Chamber Orchestra*, I.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1st sound				4th sound	5th sound		2nd sound				3rd sound		

Not all five-move patterns use the same rows, however. Furthermore, the row usage is not exactly *paralleled* among each of the five-move patterns, either. *Parallel row usage* exists between those patterns of the same variety (e.g., five-move patterns) that move the same distances vertically (between rows) on the chart from move to move, thus rendering identical patterns; if these patterns began with the same sonority, they would follow along the exact same path. Another way to describe parallel row usage is as follows: any two of these patterns could be laid on top of one another and their outlines would match precisely. Because all the patterns within a given variety (three-, eight-, and two-move) share identical use of columns, they feature *parallel column usage* by default.

The other pattern varieties may be plotted to reveal their similar column usage as well. The generic eight-move pattern uses sonorities in columns one, two, seven, twelve,

thirteen, fourteen, and nine (see figure 8). This pattern is unusual in that two of its sounds (the second and seventh) are drawn from the same column.

Figure 8. Generic scheme of eight-move patterns, *Concerto for Prepared Piano and Chamber Orchestra*, I.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1st sound	2nd sound ------- 7th sound					3rd sound		8th sound			4th sound	5th sound	6th sound

The two-move pattern is quite simple, consisting only of a sonority drawn from the eighth column and one drawn from the first column (see figure 9).

Figure 9. Generic scheme of two-move patterns, *Concerto for Prepared Piano and Chamber Orchestra*, I.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2nd sound							1st sound						

Within each of these generic designs there exists a certain degree of variety. One might expect Cage to follow the same precise design within each model, only beginning each new phrase with a different sonority. This would guarantee that all patterns of the same variety—for example, all five-note patterns—would be similar in their moves, progressing by the same increments in the same directions, and thus featuring parallel row usage as well as identical column usage. Another option would have been for Cage to abandon consistency altogether with regard to row usage, making vertical moves with no discernable pattern, leaving only the column usage comparable. Neither of these procedures were followed. Rather, Cage's row usage is somewhat comparable amongst all patterns of a given variety, but there are subtle differences—often consisting of only one, slightly altered move.

In the five-move patterns, the most common design uses the following set of vertical (row-oriented) inclusive moves: (1) up 3, (2) down 4, (3) up 2, (4) [no vertical movement].[26] The very first pattern Cage uses in the concerto follows this design, and begins on the sonority with the coordinate F1 (figure 10 depicts this pattern on a model of the chart structure). Patterns mimicking this exact design—i.e., featuring parallel row usage—may be found within approximately 38% of the five-move patterns in the movement. Compare this pattern to the one found between mm. 79 and 82, also a five-move pattern (see figure 11). The pattern at m. 79 consists of the following vertical moves: (1) up 2, (2) down 3, (3) up 2, (4) [no vertical movement]. A comparison reveals that the only deviations from the previous example come between sonorities 1 and 2, and

[26] Horizontal (column-oriented) moves need not be listed because they remain consistent among all five-move patterns, as they do among the other pattern varieties, as well.

between sonorities 2 and 3; furthermore, the difference with regard to both of those moves is only one cell on the grid.

Figure 10. Five-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 1-3.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B														
C								2						
D														
E					4	5								
F	1													
G												3		
H														
I														
J														
K														
L														
M														
N														
O														
Q														

Figure 11. Five-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 79-82.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B														
C														
D														
E														
F														
G														
H														
I														
J														
K														
L								2						
M					4	5								
N	1													
O												3		
Q														

These patterns serve as a representative example of the degree of similarity found among all designs of five-move patterns. The lack of vertical movement from the fourth to fifth sonority, for example, is common to them all. The increments of vertical movement between the other sonorities (the first, second, and third moves) are always units of two, three, or four cells. Also, many patterns would be identical (feature parallel row usage) were it not for a reversal of direction on one of the moves; for example, the second move of one pattern may move down two units, whereas the second move of another may move up two units. Because the five-move patterns are so numerous in the first movement, nearly all the sonorities within columns one, five, six, eight, and twelve—the columns five-move patterns draw from—appear within the movement at some point.

Whereas five-move patterns are found throughout the movement, the other varieties of patterns are far less prominent. Those consisting of eight moves are the next most common, but are still far from plentiful; there are only seven in the whole movement. Among those seven, six possess the exact same design—i.e., parallel row usage. In this design, the moves do not travel vertically on the chart except between the sixth and seventh sonority, where a descent of three cells is made. The pattern that spans the phrase beginning at m. 116 is such an example; it moves in a uniform, horizontal direction except between sonorities C14 and F2, where the vertical motion occurs. The visual image on the chart is of two rows of sonorities, the first row having six sonorities, the second having two (see figure 12).

Figure 12. Eight-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 116-118.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B														
C	1	2					3					4	5	6
D														
E														
F		7							8					
G														
H														
I														
J														
K														
L														
M														
N														
O														
Q														

Figure 13. Eight-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 124-130.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B														
C														
D														
E														
F														
G	1	2					3					4	5	6
H														
I														
J														
K		7							8					
L														
M														
N														
O														
Q														

The sole exception to this pattern deviates only slightly from the model, just as the various designs of five-note patterns bear close resemblance to one another. The modified eight-move pattern occurs between mm. 124 and 130. The only modification is in the vertical move between the sixth and seventh sonorities; rather than descending three cells, in this case the move is down four cells (see figure 13). Again, the difference is only one cell. Apart from this move, the patterns are identical—as is the case with all the other eight-note patterns.

Among the varieties of patterns, those consisting of only two moves are the least common. In fact, only three such patterns exist within the entire movement. Despite their relative scarcity and their minimal number of moves, these patterns are nevertheless clearly defined in the music and do not appear accidental. The first two such patterns follow the same design: the first sonority is drawn from column eight and the second sonority is drawn from column one, with a vertical displacement down 13 cells (or up 3 cells, crossing the borders of the chart). For an example of this pattern, taken from the phrase beginning at m. 96, see figure 14. The exception to this design comes with the pattern beginning at m. 136; the column usage is the same, but the row usage differs by one cell because the vertical displacement involves a move of 12 cells rather than 13. For an example of this pattern, see figure 15.

Figure 14. Two-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 97-98.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A								1						
B														
C														
D														
E														
F														
G														
H														
I														
J														
K														
L														
M														
N	2													
O														
Q														

Figure 15. Two-move pattern, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 136-137.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A														
B														
C								1						
D														
E														
F														
G														
H														
I														
J														
K														
L														
M														
N														
O	2													
Q														

As mentioned previously, the vast majority of patterns—five-, eight-, and two-move—may be described as autonomous, in that they each occupy a single structural phrase. Certain patterns, however, do not function in this manner; these patterns, which exist in two basic varieties, may be described as composite. The first variety of these composite patterns comes about when two or more patterns are required to fill the measures of a single structural phrase. Conversely, the other variety comes about when a single pattern extends into two or more phrases. Composite patterns, therefore, are present anytime a one-to-one ratio does not exist between a pattern and its analogous phrase.

A simple example of a composite pattern may be found between mm. 108 and 115. This pattern spans two distinct phrases of the rhythmic structure: the first is a three-measure phrase (mm. 108-110), the second is a five-measure phrase (mm. 111-115). Referring back to the model of the rhythmic structure in figure 4, these two phrases appear in the following position: first movement, second section, second group, final two phrases. The first phrase, containing three measures, is comprised of six moves on the chart; the second phrase, containing five measures, is comprised of two moves (but not following the two-move *pattern*). Taken as a whole, these two sets of moves form a single eight-move composite pattern, covering two separate phrases of the rhythmic structure. This pattern may be seen in figure 16, the moves from the first phrase shown in italics, the moves of the second phrase not italicized.

Figure 16. Eight-move pattern (composite), *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 108-115.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B	*1*	*2*					*3*					*4*	*5*	*6*
C														
D														
E		*7*							8					
F														
G														
H														
I														
J														
K														
L														
M														
N														
O														
Q														

A particularly complex set of these composite patterns occurs between mm. 131 and 138. Like the previous example, this set of composite patterns also span the final two phrases of a group; in this case, the phrases are located in movement one, section three, group one. The first phrase, consisting of three measures, is comprised of six chart moves. The second phrase, consisting of five measures, is comprised of four chart moves. The patterns break down as follows: the six moves within the first phrase combine with the first two moves of the second phrase to form an eight-move pattern, while the remaining two moves of the second phrase stand alone in the form of a two-move pattern. These two composite patterns are shown together in figure 17. The first six moves (from the first phrase) are shown in italics, and the remaining two moves of the eight-move pattern are underlined. The following two-move pattern, filling out the

remainder of the second phrase, is shown in regular font (this happens to be the same pattern featured in figure 15).

Figure 17. Eight- and two-move composite patterns, *Concerto for Prepared Piano and Chamber Orchestra*, I, mm. 131-138.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
A														
B														
C								1						
D														
E	*1*	*2*					*3*					*4*	*5*	*6*
F														
G														
H		7							8					
I														
J														
K														
L														
M														
N														
O	2													
Q														

Given that the concerto's phrases appear in lengths of two, three, four, and five measures each, and given that the patterns of sonorities appear in groups of two, five, and eight moves each, one may reasonably assume that Cage enacts some type of correspondence between phrase lengths and pattern varieties, matching the longer of the former with the longer of the latter, and the shorter with the shorter. This, however, appears not to be the case. Rather, one finds a mix of different patterns within the various phrases, and little to no correspondence by length.

Figure 18 depicts the placement of sonorities within the movement's rhythmic structure. The figure is presented in a format similar to those put forth by Pritchett for the

concerto's second and third movements, as transcribed from the Tudor worksheets. The vertical column on the right represents phrases, in accordance with their lengths in measures (again, note that these follow the sequence of the rhythmic structure). The series of coordinates listed horizontally reflects the placement of the respective sonorities on the chart. Most of these appear in groups of five, eight, or two sonorities, those being the lengths of the movement's patterns; these groups represent the patterns previously described as autonomous. Those grouped in numbers other than five, eight, or two are parts of composite patterns, and are designated with asterisks. The designation of 'pn.' indicates that the phrase in question is occupied exclusively by solo piano content rather than chart-derived orchestral material.

Figure 18. Coordinates of sonorities, *Concerto for Prepared Piano and Chamber Orchestra*, I.

F1	C8	G12	E5	E6					3
C1	F8	D12	B5	B6					2
G1	D8	H12	F5	F6					4
pn.	—	—	—	—	—	—	—		4
E1	B8	F12	D5	D6					2
D1	A8	E12	C5	C6					3
B1	O8	C12	A5	A6					5

G1	J8	H12	F5	F6					3
J1	G8	K12	I5	I6					2
H1	K8	I12	G5	G6					4
K1	H8	L12	J5	J6					4
pn.	—	—	—	—	—	—	—		2
pn.	—	—	—	—	—	—	—		3
A1	A2	A7	A12	A13	A14	D2	D9		5

A1	N8	B12	Q5	Q6					3
O1	L8	Q12	N5	N6					2
L1	O8	C12	A5	A6					4
pn.	—	—	—	—	—	—	—		4
pn.	—	—	—	—	—	—	—		2
pn.	—	—	—	—	—	—	—		3
L8	I1								5

Figure 18. Coordinates of sonorities, *Concerto for Prepared Piano and Chamber Orchestra*, I (continued).

pn.	—	—	—	—	—	—	—		3
pn.	—	—	—	—	—	—	—		2
Q1	M8	A12	O5	O6					4
N1	L8	O12	M5	M6					4
I1	F8	J12	H5	H6					2
F1	I8	G12	E5	E6					3
I1	F8	D12	B5	B6					5

L1	L2	L12	L13	L14	O2	O9			3
A8	N1								2
pn.	—	—	—	—	—	—	—		4
N1	A8	E12	C5	C6					4
B1	D8	Q12	C5	C6					2
B1	B2	B7	B12	B13	B14			*	3
E2	E9							*	5

C1	C2	C7	C12	C13	C14	F2	F9		3
M1	M2	M7	M12	M13	M14			*	2
Q2	Q9	G1						*	4
G2	G7	G12	G13	G14				*	4
K2	K9							*	2
E1	E2	E7	E12	E13	E14			*	3
H2	H9	C8	O1					*	5

pn.	—	—	—	—	—	—	—		3
pn.	—	—	—	—	—	—	—		2
O1	L8	Q12	B5	B6					4
pn.	—	—	—	—	—	—	—		4
B1	E8	I12	K5	K6					2
I1	L8	H12	F5	F6					3
D1	A8	O12	A5	A6					5

A1	N8	Q12	B5	B6					3
B1	E8	I12	K5	K6					2
pn.	—	—	—	—	—	—	—		4
D1	A8	O12	A5	A6					4
pn.	—	—	—	—	—	—	—		2
pn.	—	—	—	—	—	—	—		3
O1	L8	N12	Q5	Q6					5

pn.	—	—	—	—	—	—	—		3
pn.	—	—	—	—	—	—	—		2
pn.	—	—	—	—	—	—	—		4
pn.	—	—	—	—	—	—	—		4
pn.	—	—	—	—	—	—	—		2
pn.	—	—	—	—	—	—	—		3
O1	L8	N12	Q5	Q6					5

As the above figure reveals, a fair amount of the movement's phrases are filled by prepared piano material. The orchestra and the soloist are most frequently heard apart from one another, the piano material generally being introduced at the start of a new structural phrase just as the orchestral material disappears. This differentiation of the performing forces isolates the piano part from the ensemble proper, highlighting the piece's adherence to the traditional disposition of forces in a solo concerto. During the phrases in which the piano is featured and the orchestra is absent, the chart is temporarily abandoned, for the piano material is freely composed and drawn from Cage's subjective taste and inclinations. In instances in which the two groups are heard together, overlapping one another, the piano part is still freely composed, and the orchestra continues its patterned use of the chart materials.

Even upon one's initial exposure to the work, a marked difference in affect may be discerned between the orchestral material and that of the solo piano. The piano music is quite reminiscent of Cage's *Sonatas and Interludes* in this capacity, the realm of what may be termed 'expressiveness'. Although Cage described the piano's material as representing the "romantic" side of the concerto, it certainly lacks the sweeping, dramatic gestures such a description might conjure up. Instead it possesses what might be best described as a 'veiled expressiveness', a subdued and understated affect. Despite its subtlety, however, its impact is far different from that of the orchestral material. This is largely due to two features of the piano's musical content: the presence of varied rhythmic figures, and the use of motivic repetition.

The first of these characteristics is perhaps the most pronounced because of the clear contrast it provides with the orchestra's chart-derived musical content. The piano's

solo passages present a multitude of rhythmic figures, often featuring quick, pianistic flourishes alongside static whole notes, and other colorful rhythmic juxtapositions. Secondly, they introduce devices such as syncopation that inhibit the perception of a consistent meter or pulse. All of this stands in contrast with the rhythmic profile of the orchestral material, which is largely based on units of half notes or whole notes, the vast majority of which begin squarely on the beat (for that matter, most often on beats one or three). Thus the temporal component of the orchestral music comes across as nearly static, with the persistent regularity of a ticking clock. The piano part, by contrast, is rhythmically varied and just unpredictable enough to be engaging to an ear seeking the ebb and flow of traditional musical gestures.

The piano material also features many of the same type of elegant, motivic patterns that mark much of Cage's earlier music for prepared piano. The composer, for example, might select a group of pitches (usually among those affected by the piano's preparations) and place them in a clear, repetitive pattern while allowing a sustained pitch to resonate above them. Such motives often convey a sense of economy, as the melodies and rhythms are used sparingly, in a concentrated manner. Often such patterns are interrupted by one of the pianistic flourishes previously alluded to, or simply allowed to sustain and gradually decay into silence. The resulting textures—and this applies to the orchestral material as well—are most often thin and transparent, drawing attention to each unique sonic event.

Despite some similarities with regard to texture, it goes without saying that the orchestral part does not feature motivic patterns like those in the piano part, only its chart-derived sequences of sonorities. These yield no melodic repetition whatsoever,

only the perception of endlessly shifting timbres and pitch collections. Oddly, the two characteristics that lend the piano part its expressiveness are, seemingly, also in an oppositional relationship: on the one hand, the repetition of melodic motives, and on the other hand, the variety (e.g., *lack* of repetition) of rhythmic values. Similarly, the orchestra's material—objective, detached—is marked by the apparently contrasting components of a thoroughly static temporal profile alongside a vivid, *non-static* kaleidoscope of pitches and timbres. Perhaps the explanation of this paradox lies in the degree to which these features present themselves. Insofar as teleology is most clearly discerned by the perception of relationships among events and gestures—this being a central tenet of information theory, as well as musicological writings drawn from such theory—we may posit that gestures within the concerto's piano part exhibit enough consistency to warrant a perceptible relationship, but enough variety to prevent the perception of stasis. Conversely, the orchestral part achieves precisely the opposite effect; its patterns (those of temporal consistency) are so unrelenting as to result in stasis, and the variety of its chart sonorities is so diverse as to render the traditional perception of relationships impossible. It may be argued, then, that anti-teleological music can result as clearly from the perception of *too much* consistency among musical gestures, as it may from *too little*.[27]

Discussion regarding the issue of teleology leads back to Cage's comments about the concerto's design and its goal of presenting two opposing forces within the first

[27] For an early treatment of the subject of anti-teleology in avant-garde music, see Leonard B. Meyer's "The End of the Renaissance?" in *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture* (Chicago: University of Chicago Press, 1967; revised with additional material, 1994), 68-84. A more recent discussion of these ideas, placed in the context of postmodern trends, may be found in

movement: one with a communicative sense of personal expression, and one conveying the concept of 'no-continuity' his art had begun to embrace. Regarding the latter, the orchestral content, Cage made one of his most revealing statements on the concerto. After describing the manner in which he constructed the chart of sonorities, he wrote, "I then made moves upon this chart of a "thematic nature" but, as you may easily see, with an "athematic" result."[28] What Cage refers to in this comment are his patterns of moves, as discussed previously in this study. Of particular interest is his choice of wording, the description of the patterns themselves as 'thematic', but of the musical results they yield as 'athematic'.

Anyone familiar with Cage's writings—if only the "Lecture on Nothing" and the "Lecture on Something," described previously—will recognize the apparent semantic contradictions as hallmarks of the composer's narrative constructions. Just as with the other examples discussed in this study, however, the 'thematic/athematic' dichotomy is a viable description of its subject, not merely a play on words or an attempt to befuddle his readers. Cage appears to equate the term 'theme' and its derivatives with the type of artificially constructed continuity he criticized in the "Lecture on Something." By contrast, that which is 'athematic' only exhibits the 'natural' continuity that exists among all things—Cage's 'no-continuity'. Thus, when he devised the patterns of moves on his chart of sonorities, he was constructing themes of a sort; when these were translated into actual sounds, however, they became 'athematic'. This is precisely because the patterns were chosen apart from a knowledge of the sonorities' harmonic properties, and apart

---

Charles Hamm's "Privileging the Moment: Cage, Jung, Synchronicity, and Postmodernism," *Journal of Musicology* 15/2 (Spring 1997): 278-289.

from a recognition of relationships among them. In other words, Cage conceived of the sonorities as sounds when he was first composing the chart itself, and again once they were applied in the concerto; in between—when the patterns were created and the sonorities were transferred to the piece—they existed only as cells on a chart, like the moves on a chess board.

Cage's comment about the patterns reveals that the composer's conception of artistic non-intention was beginning to mature, for it bears striking resemblance to a phrase he would come to use in the future to describe his compositional goal: "purposeful purposelessness." The resemblance is not just in semantic construction, but in meaning, as well. 'Purposeful purposelessness' implies that one is embracing the idea of non-intention conscientiously, but subsequently allowing it to take its course unimpeded by subjective personal taste. Compare it, for example, to another phrase that appears in the literature associated with Cage's music: "the disciplined use of chance procedures." Again, the point is the same. Cage began to remove his subjective taste from the orchestra's part in the concerto when he conceived the chart, and continued in the manner in which he 'chose' the sonorities by limiting himself to certain patterns. This is the disciplined, 'purposeful' part, or the 'thematic' component; later, as these sounds emerge within the piece relatively unencumbered by the composer's personal intention and will, they become 'purposeless' and consequently 'athematic'.

I use the qualifier "relatively" because the chart patterns of the first movement cannot by termed 'chance procedure' in a true sense, for the composer's personal subjectivity is not completely erased (one may claim that it never is, in fact). True to its

---

[28] John Cage, letter to Pierre Boulez, 22 May, 1951. In Nattiez, ed., with Davoine, Oesch,

status as a composition reflecting aesthetic transition, the concerto reveals Cage easing his way into the idea of artistic non-intention, slowly, across the three movements. For even in the orchestral content within the first movement there still remain vestiges of the composer's subjective taste. The clearest example may be seen in his treatment of the pattern varieties. As discussed previously, he was consistent is his use of columns within each variety of pattern (five-, eight-, and two-move); he avoided parallel row usage, however, by sliding up or down a single cell (occasionally more) in various patterns. This allowed him some leeway in subjectively choosing what sonority might be placed in the music at a given spot. The result is that certain sonorities—those clearly favored by Cage—appear with somewhat more frequency than others, although it is still clear that he did not allow himself to choose the sounds freely at will; they had to fit either within the framework of a given pattern, or represent only a slight deviation (e.g., a small move up or down one cell). Also, Cage was free to pick among the different varieties of patterns to fill any given phrase, thus deciding whether five, eight, or two moves would occupy the temporal space. In addition, the sonorities' rhythmic profiles were completely determined by Cage's subjective inclinations; thus, such crucial matters as pacing, density of activity, rests, etc. were left to taste. Lastly, dynamic indications were also added to the sonorities as they were transferred to the work itself, allowing the composer a good deal of expressive leeway.

One may observe aspects of subjectivity in a variety of contexts within the movement. For example, Cage clearly chooses to align the patterns, at times, such that the end of a phrase coincides with some particularly striking sonic event. The phrase

---

Piencikowski, and Samuels, *The Boulez-Cage Correspondence*, 93.

beginning at m. 93, for instance, is the first such phrase of its group; this group is the fifth among nine in the movement, and thus may be thought of as the central group, with four others on each side. The phrase at m. 93 begins with the most jarring din of the whole movement, featuring an array of percussion and non-traditional instruments—this immediately following the *pppp* closing of the previous structural group. Such alignments of structural sections and events occur elsewhere, also, and appear too coincidental to be simply the by-product of purely automated chart patterns.

One may observe also the regularity with which Cage uses particular sonorities, perhaps allowing his pattern-deviations to steer him toward these favored sounds. For example, the sonority in cell L8—consisting of octave e-naturals on the harp, accompanied by the sound of a fingernail being slid over a piano string—appears six times within the movement, more than any other sound. Similarly, Cage at times seems to manipulate his patterns to allow the reappearance of sonorities in significantly close proximity to one another. It is not uncommon for a phrase of solo piano material to be framed by the same sonority, both ending the phrase preceding the piano passage and beginning the phrase that follows it. Cage frames a particularly significant piano passage near the movement's conclusion with the exact same sequence of sonorities—a musical gesture of very traditional sensibility.

This long solo passage, which appears between mm. 185 and 203, suggests a nod to convention: given its location, it appears to fulfill the role of a concerto cadenza. Other hints of traditional first-movement structure exist, as well. Referring to the worksheet of sonorities in figure 17, one may observe that the composite patterns are all situated roughly within the same area, beginning about halfway through the movement.

Given that Cage compared his patterns to themes, and that the composite patterns are the most complex among these, this tangled mass of complicated patterns—which cloud the previous clarity of the phrase/pattern relationship—may even suggest that the composer was attempting to imply some sort of development section within the opening movement of this concerto. Such traces of conventional practice in the piece act as referential codes, alluding to the work's genre.

Although the specifics of this 'musical usage' of the charts may be subject for debate, it is nevertheless clear that the degree of Cage's non-intention within the concerto evolves over the course of the work's three movements, and the first of these reveals the most subjective intervention. This shows Cage feeling his way into his new compositional aesthetic one step at a time, each bolder than the one before it. The remaining movements of the concerto continue this trend, moving closer to the application of chance procedures as a way of denying the self, permitting whatever eventualities may surface.

Movements Two and Three

The worksheets and other sketch materials from the Tudor collection allowed Pritchett to offer a fairly complete account of the compositional procedures Cage used in the concerto's second and third movements.[29] What follows is a brief summary of those procedures, presented as a context to frame the previous discussion of movement one.

The second movement differs from the first most clearly with regard to the piano part: this material is no longer freely composed, as it was in the first movement, but is

[29] See Pritchett, "The Development of Chance Techniques in the Music of John Cage, 1950-1956," 66-87.

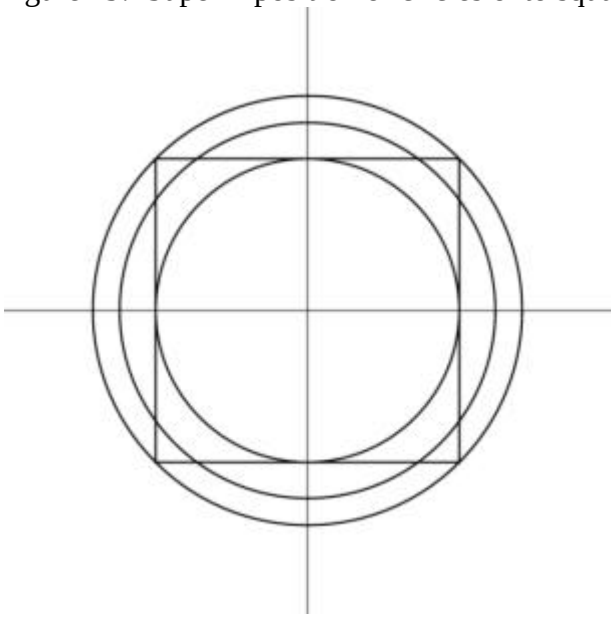
drawn from a chart of sonorities similar to the one used by the orchestra. This piano chart, possibly lost, was apparently of similar dimensions to the orchestra chart, although its sonorities were somewhat different. As Pritchett notes, the passages for piano remain rhythmically diverse in the second movement, just as they had been in the first movement. It may be inferred that the sonorities on the chart were of the variety Cage referred to as "constellations," meaning that they possessed rhythmic profiles—i.e., they existed in some temporal context even within the chart. Nevertheless, these sonorities were treated as single units when transferred to the piece.

Cage appears to have applied the same method to both the piano and orchestral charts, and the workings of this method constitute another major distinction between the first and second movements. Using a single chart template (a 14 by 16 grid of blank cells), Cage worked out a procedure involving the superimposition of geometric shapes upon the charts. One manuscript leaf in the New York collection, a sheet of graph paper, contains this sketch work; its presence corroborates Pritchett's account of the method. Cage drew squares of various sizes on the grid, and then superimposed circles over the squares. One of three possible configurations resulted: a circle enclosed within a square, touching its sides at four places; a circle surrounding a square and touching its four corners; or a circle placed somewhere between these two extremes (see figure 19).

In the first two cases, the four points of contact could be translated into four cells on the grid; the third case resulted in eight points of contact between the circle and the square, and thus eight cells on the grid. Cage duplicated this procedure with a variety of different sized squares and circles, yielding many sequences of chart coordinates. These

coordinates were then transferred to the actual charts, producing patterns of moves like those that were discussed in reference to the first movement.

Figure 19. Superimposition of circles onto square.



As in the first movement, Cage then extracted the patterns from the charts and transferred the sonorities to the piece. He chose which patterns would be applied to the orchestra part and which would be applied to the piano part, as well as determined rhythms, dynamic levels, and other 'expressive' considerations. In this respect, the movement is somewhat similar to the one that precedes it, the most significant difference being the 'automation' of the piano content. In addition, the square/circle procedure seems to have left Cage with a bit less control than he had over the patterns in the first movement. The small deviations from the method he allowed himself in the prior movement are now gone, and replaced by a system somewhat more resistant to his subjective intervention.

In the third movement the polarity between intention and non-intention is resolved by the introduction of chance procedures, allowing the aesthetics of non-intention to prevail. This is brought about by Cage's use of the *I Ching*, the Chinese divination book, a copy of which he had received from Christian Wolff at the time he was composing the concerto. He was immediately struck by the similarity of the *I Ching* table to the charts he had constructed for the concerto and chose to employ the book's method for obtaining chance-derived numbers in the concerto's final movement.[30] This application of the *I Ching* takes place in two ways: first, in the creation of a new chart of sonorities, and second, in the procedure Cage used to transfer the sonorities to the piece itself. The first of these applications was described by the composer in a letter to Boulez, in which he explains that the third movement is based on a single chart that governs both the piano and orchestral content, and represents the metamorphosis of the previous two charts. The duality between the forces of *yin* and *yang* in the *I Ching* acts as an analogue to Cage's theme of opposing forces in the composition. By tossing coins for each cell in the new chart, Cage determined whether to use a sonority from the previous piano chart, one from the previous orchestral chart, or a sonority incorporating both piano and orchestral sounds for the given cell. This third possibility was suggested by the *I Ching*'s principle of 'moving forces': *yin* moving to *yang*, or *yang* moving to *yin* (thus, either a piano sonority merging into an orchestral sonority, or vice versa). A comparison between the manuscript of this chart of sonorities, located within the New York collection, and the orchestral chart from movements one and two reveals which sonorities were retained from the former charts, and which were newly composed as 'moving' sonorities.

[30] Cage and Charles, *For the Birds*, 43.

Cage's method of transferring these chart sonorities to the piece is described by Pritchett, whose study again incorporated worksheets from the Tudor collection. Cage created two blank chart templates to begin with, each with sixty-four cells—this based on the sixty-four hexagrams of the *I Ching*—and shaped each to guarantee equal returns of sound and silence. By tossing coins he arrived at a series of moves on these charts that could be translated to his actual chart of sonorities and then transferred to the piece itself. In this movement, the composer creates for the first time a type of correspondence between his sonorities and the multiple levels of his rhythmic structure. The proportions the rhythmic structure, <3, 2, 4, 4, 2, 3, 5>, create a palindrome between the segment (3, 2, 4) and the segment (4, 2, 3), and Cage exploits this feature in his compositional method. He uses the same set of chance-derived numbers for the phrase groups these segments represent, with the second three mirroring the first three. They mirror one another in the uniquely Cagean exchange of silence and sound: each sound in the first three groups 'reflects' silence in the second three, while each silence 'reflects' a sound. The final segment (5) has its five measures graced by complete silence every time it appears within the movement. Thus, the structure aligns itself with Cage's method within each section and within each phrase, a much more intricate relationship than the one present in the first two movements.

The reconciliation of oppositional forces, the defining characteristic of the third movement, takes several forms. The most apparent concerns the polarization of the performing forces, abandoned as the piano and ensemble begin to move in tandem under the uniform auspice of chance operations. The integrated movement of the solo and ensemble parts signals a breakdown of conventions associated with the concerto genre as

well as the composer's embrace of a more egalitarian approach to orchestration. Most of Cage's later works would be scored in this non-hierarchical manner, a symbolic gesture reflecting the utopian ideal of equality among parts. Similarly reconciled is the duality of sound and silence, the parity of which is provided by the palindromic construction of the rhythmic structure; the resulting music possesses a spaciousness that sets it apart from the previous movement, rendering it uniquely engaging.

The conflict most central to the piece's design is that of intention versus non-intention. This duality is not treated in the same manner as other dualities previously discussed. Those forces opposed to one another in the previous cases were synthesized in an almost dialectical sense, the process yielding new and integrated entities: the metamorphosed chart of sonorities, the palindromic reconciliation of sound and silence within the rhythmic structure. The polarity of intention and non-intention, however, was weakened and eventually abandoned *in favor of non-intention*. There was no synthesis in this respect, only an abandonment of duality with a clear victor. The polarity between the two principles, so strong in the first movement, was weakened in the second movement by the piano's utilization of the chart; in the third movement, by turning to chance-derived procedures, Cage allows non-intention to prevail in the most clear and unequivocal manner.

CHAPTER 4

OUTCOMES AND CONCLUSIONS

> While it is true that [Eastern works of art] employ what are, to us, highly difficult technical disciplines, it is always recognized that they are instrumental and secondary, and that superior work has the quality of an accident. This is not merely a masterful mimicry of the accidental, an assumed spontaneity […] for what the culture of Taoism and Zen proposes is that *one might become the kind of person who, without intending it, is a source of marvelous accidents*.
>
> Alan Watts, *The Way of Zen* (emphasis mine)

The epigraph above bears certain relevance to the emerging music of John Cage in 1951, especially viewed apropos of its source and context. Watts, a Western scholar, was among the first writers to offer an English-language account of Zen Buddhism following the second world war—albeit one of a simplified variety. Similarly, Cage—a Westerner, a pupil of Schoenberg for two years—began applying principles of Taoism and Buddhism to his music in the early 1950s, and, in so doing, charted an artistic course that diverged greatly from the one set before him by Schoenberg, Stravinsky, and most other forebearers of the mid-century Western avant-garde.

This is not to say that Cage's music unequivocally passes the litmus test that Watts proposes with reference to "superior works" of Eastern art; in fact, this point is part of a highly contentious debate that has accompanied the composer's chance-derived and indeterminate music since it first surfaced nearly a half century ago, just as New York's artistic and intellectual circles began the Western embrace and popularization of Zen.

For example, one may argue that Cage never transcends the personal desire to effect the artistic "accidents" Watts speaks of, that his maxim of "*purposeful* purposelessness" betrays the spirit of Eastern art by its own, acknowledged contrivance; it is not, after all, "*purposeless* purposelessness." Likewise, one may argue that all of Cage's attempts to bring about 'no-continuity' through compositional devices—be they the chart techniques, chance procedures, or indeterminacy of performance—still ultimately yield an artificial product, one possessing what Watts refers to as an "assumed spontaneity." The composer's supporters may be inclined to disagree with such an assessment, arguing instead that Cage—at some discrete point in his artistic development, perhaps with the *String Quartet in Four Parts*, perhaps with the concerto, perhaps not until his employment of indeterminate notation—was able to move beyond the technical fabrication of spontaneity into a realm where he "became a source of marvelous accidents" without even intending to do so.

Following his application of the *I Ching* to the final movement of the concerto, Cage continued in the same year to produce the *Music of Changes* for solo piano, his most systematic and thorough application of chance compositional procedures within a work featuring a fixed, determinate score. In composing the piece he created charts of sonorities as he had done for the concerto, but designed them from the start to be compatible with the *I Ching*; consequently, the compositional method is streamlined, while the music's grounding in the aesthetics of non-intention is made even clearer than it was in the concerto's last movement. The piece presents a number of interesting parallels with the music composed by Boulez in the same year, particularly his *Structures 1a* for two pianos; the two works are analogous, though certainly not homologous. Like many

of the post-Webernians, Cage attempted to integrate different compositional dimensions through a uniform set of systematic operations. Thus, the *Music of Changes* uses *I Ching*-based charts not only for the derivation of its sonorities, but so too for its durations and dynamics, similar to the manner in which the integral serialists sought to submit all musical parameters to the *a priori* discipline of a prescriptive method.

The *Music of Changes* furthers other themes introduced in the concerto, as well. The piece's charts provide for the complete equality of sound and silence in a manner somewhat similar to the concerto's last movement. The following year, 1952, would find Cage in an anechoic chamber at Harvard University arriving at his (in)famous epiphany regarding silence: that it and sound are not separate at all, but one and the same, only a function of our own selective reception; the piece *4'33"* would follow shortly thereafter.

Lastly, Cage's follow-up to the concerto, *Music of Changes*, is significant for its complete disavowal of expression, in that the piece eschews representations of any kind. A chance-derived abstraction, *Music of Changes* avoids the sort of quasi-programmatic themes that unified the major works that preceded it. The quartet of 1950, for example, was shaped around a conception of the four seasons, as described by Coomaraswamy, and steeped in the aesthetician's belief in the inherent expressiveness of artworks. When composing the concerto, and once his study of Zen had begun to cast doubt on this belief, Cage questioned the idea of artistic expression; the sense of conflict this questioning brought about ultimately itself provided the concerto's theme. The aesthetic of non-intention and non-expression prevailing, however, Cage was free in the *Music of Changes* to simply allow his sounds to "be themselves," unencumbered by representational, referential, or intellectual constructs.

All these comparisons present a picture of the concerto as a pivotal work in Cage's output from the period, but also pose a danger. At the start of this essay it was proposed that the common critical treatment of Cage's oeuvre as a series of discrete compositional steps, each revealing the composer's practices and aesthetics in a new light, was perhaps responsible for the relative lack of attention allotted to the concerto, or its potential dismissal as an uneven work lacking a cohesive foundation. Equally misleading, however, may be to view the piece exclusively as a pivotal connection between the works that chronologically precede and follow it, extolling its value as a catalyst of artistic change. Both of these positions are based on a dubious view of evolutionary development in Cage's music, the assumption that the composer's works and ideas are linked in a sequential, linear chain, each ascending toward some future goal. Such thinking has a tendency to neutralize the value of individual pieces, especially those such as the concerto, only assigning them value insofar as they service the process of historical change. As the music of Cage and his contemporaries quickly becomes placed within—and fodder of—historical constructs, it seems more and more appropriate that its historical context be evaluated, as Leo Treitler would suggest, on the relationship of the part to the whole, rather than the antecedent to the consequent.[1]

Before such contextual evaluation can take place, however, the work must be understood on its own terms. In an interview shortly before his death, Cage unknowingly revealed his thoughts on the role of such musicological research. He discussed returning to one of his own pieces only to find he had forgotten what his methods had originally been in composing the piece:

[1] See Leo Treitler, "The Present as History" in *Music and the Historical Imagination* (Cambridge,

> I was then obliged to understand anew what I had done, which actually I no longer recognized. I had to figure out, insofar as I could, what it was that I had meant.[…] So I studied the work as though I were a musicologist, trying to figure out what could have been in my mind.[2]

This study of the *Concerto for Prepared Piano* has been a somewhat similar pursuit, an attempt to approach the work through a twofold method: the analysis of technical procedures—specifically with regard to the previously neglected first movement—presented alongside a description of the various aesthetic and philosophical concepts influencing the composer's thinking during the time-frame of the piece's composition.

When Cage set about to compose the concerto he was well on his way toward becoming a "source of marvelous accidents." The line between intention and non-intention is not as clear as it may appear, and although all accidents result from non-intention, not all are products of chance operations. The concerto is a testament to this wonderful ambiguity: its three movements reveal the gradual denial of Cage's ego, an incremental loosening of the grip of personal expression and artistic intention. And throughout, accidents abound: unimpeded, interpenetrating, and marvelous.

MA: Harvard University Press, 1989), 95-156.

[2] John Cage and Joan Retallack, *Musicage: Cage Muses on Words, Art, Music* (Middletown, CT: Wesleyan University Press, 1996), 177.

REFERENCES

Boulez, Pierre. "Aléa." *Perspectives of New Music* 3/1 (Fall 1964): 42-53.

Cage, John. *I-VI*. Cambridge, MA: Harvard University Press, 1990.

_____. *A Year from Monday*. Middletown, CT: Wesleyan University Press, 1967.

_____. *John Cage.* Richard Kostelanetz ,ed. New York: Praeger Publishers, 1970.

_____. *John Cage: Writer*. Selected and introduced by Richard Kostelanetz. New York: Limehouse Editions, 1993.

_____. *Concerto for Prepared Piano and Chamber Orchestra*. New York: C.F. Peters, 1960.

_____. "East in the West." *Modern Music* 23/2 (Spring 1946): 111-115.

_____. Manuscript sketches and compositional materials for the *Concerto for Prepared Piano and Chamber Orchestra*. JBP 94-24 Folder 945, Library of the Performing Arts at Lincoln Center, NY.

_____. *Silence*: *Lectures and Writings*. Middletown, CT: Wesleyan University Press, 1961.

Cage, John and Daniel Charles. *For the Birds: in conversation with Daniel Charles*. Boston: Marion Boyars, 1981. Originally published in French as *Pour les oiseaux*. Paris: Editions Pierre Belfond, 1976.

Cage, John and Richard Kostelanetz. *Conversing with Cage*. New York: Limehouse Editions, 1987.

Cage, John and Joan Retallack. *Musicage: Cage Muses on Words, Art, Music*. Middletown, CT: Wesleyan University Press, 1996.

Campana, Deborah. "Form and Structure in the Music of John Cage." Ph.D. diss., Northwestern University, 1985.

Coomaraswamy, Ananda. *The Transformation of Nature in Art*. Cambridge, MA: Harvard University Press, 1934. Reprint ed., New York: Dover, 1956.

Fleming, Richard and William Duckworth, eds. *John Cage at Seventy-Five*. Lewisburg: Bucknell University Press, 1989.

Griffiths, Paul. *Cage*. London: Oxford University Press, 1981.

Hamm, Charles. "Privileging the Moment: Cage, Jung, Synchronicity, and Postmodernism." *Journal of Musicology* 15/2 (Spring 1997): 278-289.

Kessler, Howard. "Rhythmic Cycles and Self-Similarity in John Cage's *Concerto for Prepared Piano and Chamber Orchestra*, First Movement." *Sonus* 15/2 (Spring 1995): 113-129.

Kostelanetz, Richard. *John Cage (ex)plain(ed)*. New York: Schirmer Books, 1996.

_____, ed. *Writings about John Cage*. Ann Arbor: University of Michigan Press, 1993.

Kuhn, Laura. "John Cage's *Europeras 1 & 2*: The Musical Means of Revolution." Ph.D. diss., U.C.L.A., 1992.

Meyer, Leonard B. *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture*. Chicago: University of Chicago Press, 1967. Revised with Additional material, 1994.

Nattiez, Jean-Jacques, ed., with Francoise Davoine, Hans Oesch, and Robert Piencikowski. *The Boulez-Cage Correspondence*. Trans. and edited by Robert Samuels. Cambridge, England: Cambridge University Press, 1993. Originally published in French and English as *Pierre Boulez / John Cage: Correspondance et documents*. Winterthur: Amadeus Verlag, 1990 and Basel: The Paul Sacher Stiftung, 1990.

Nicholls, David. "Cage and the Ultra-Modernists." Presented at the meeting of the American Musicological Society in Boston, 30 October 1998.

O'Grady, Terence J. "Aesthetic Value in Indeterminate Music." *Musical Quarterly* 67 (1981): 366-381.

Patterson, David. "Appraising the Catchwords, c. 1942-1959: John Cage's Asian-Derived Rhetoric and the Historical Reference of Black Mountain College." Ph.D. diss., Columbia University, 1996.

Pritchett, James W. "The Development of Chance Techniques in the Music of John Cage, 1950-1956." Ph.D. diss., New York University, 1988.

_____. "From Choice to Chance: John Cage's *Concerto for Prepared Piano*." *Perspectives of New Music* 26/1 (Winter 1988): 50-81.

_____. *The Music of John Cage*. Cambridge, England: Cambridge University Press, 1993.

Shultis, Christopher. *Silencing the Sounded Self: John Cage and the American Experimental Tradition*. Boston: Northeastern University Press, 1998.

Suzuki, D.T. *Zen Buddhism: Selected Writings of D.T. Suzuki*. Edited by William Barrett. New York: Anchor Books, 1956. Reprint, New York: Image Books, 1996.

Swed, Mark. "John Cage: September 5, 1912–August 12, 1992." *Musical Quarterly* 77/1 (Spring 1993): 132-144.

Treitler, Leo. "The Present as History." In *Music and the Historical Imagination* (Cambridge, MA: Harvard University Press, 1989), 95-156.

Watts, Alan. *The Way of Zen*. New York: Pantheon Books, 1957. Reprint, New York: Vintage Books, 1989.